

BOSTON PUBLIC LIBRARY



3 9999 10256 051 1

No 3848.51



N

book or mark it with  
les are imposed by the  
Commonwealth of Mas-  
208, Section 83.

**DUE**

1  
1936



3848.51

THE ART  
OF  
BOTANICAL DRAWING.

1694







PASSION FLOWER.

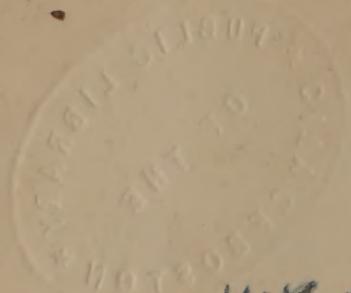
THE ART  
OF  
BOTANICAL DRAWING.  
BY  
F. W. BURBIDGE,

*Formerly of the Royal Gardens and Herbarium, Kew.*

WITH TWENTY ENGRAVINGS DESIGNED BY THE AUTHOR.

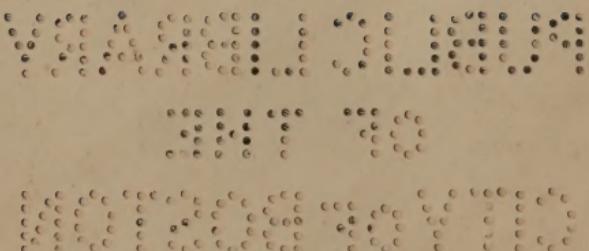


LONDON:  
WINSOR AND NEWTON, 38, RATHBONE PLACE.  
Manufacturing Artists' Colourmen, by Special Appointment, to Her Majesty,  
and their Royal Highnesses the Prince and Princess of Wales.



147.029

Nov 8., 1873



## CONTENTS.

---

	Page
Preface . . . . .	9
Introductory Remarks . . . . .	14
Materials for Drawing . . . . .	18
How to draw Foliage . . . . .	21
,, Regular Flowers . . . . .	30
,, Irregular Flowers . . . . .	37
,, Fruits and Seeds . . . . .	43
,, Enlarged Details, &c. . . . .	47
Arrangement . . . . .	49
Shading and Colouring . . . . .	52
Picturesque Sketches . . . . .	56
Hints and Suggestions . . . . .	58



## ILLUSTRATIONS.

---

FIG.		Page
	Passion Flower . . . . .	Frontispiece
	How to point a pencil . . . . .	19
1.	Fern Fronds studied from the "flat" . . . . .	23
2.	Simple and Compound Leaves . . . . .	20
3.	Oblong Leaf from the "flat." Leaves in Perspective. . . . .	25
4.	Opposite and Verticillate Leaves . . . . .	28
5.	Ternate and Cruciform Flowers . . . . .	32
6.	Dipladenia . . . . .	33
7.	Primula Flowers . . . . .	34
8.	Composite Flowers. Diagram. . . . .	35
9.	Odontoglossum. . . . .	38
10.	Diagonal view of Orchid Flower . . . . .	40
11.	Oncidium Flowers . . . . .	40
12.	Odontoglossum . . . . .	42
13.	Fruits and Seeds . . . . .	44
14.	Diagram for drawing same . . . . .	45
15.	Disa Grandiflora . . . . .	48
16.	Masdevallia Harryana . . . . .	50
17.	Arrangement of erect-growing plants . . . . .	51
18.	Palm . . . . .	57



## P R E F A C E.

---

SO soon as men of intelligence and learning had acquired an earnest love and regard for Natural History with the ultimate view of furthering or advancing scientific research, they would also feel it to be essentially necessary either to preserve specimens, where practicable, or adopt other means by which examination and comparison could be made at any time, when the fresh or living objects themselves were not obtainable—or, if procurable, not in a fit and proper condition for examination.

Especially would this want be felt by students of the Vegetable world, since many plants only flower at long intervals, and then often bear flowers so exceedingly fugacious in their character that it actually becomes an imperative necessity to preserve some lasting resemblance of their characteristic appearance generally, to which

may be added any details or analysis likely to be of service from a structural or physiological point of view.

Dried specimens in the case of the more delicate vegetable objects become more or less deformed, or misshapen, during the process of dessication to which they must of necessity be subjected, in order to get rid of the moisture they contain, and consequently they are easily broken and more or less difficult to examine. Those preserved in spirits of wine lose their colouring matter and become very brittle with age, besides occupying more space in the cabinet or herbarium than can in most cases be spared, hence have we recourse to pictorial art; drawings giving, when well and carefully made, a better idea of their natural characteristics than any other means at our disposal.

In making scientific drawings of plants, as in other forms of Natural History, a great amount of care and no mean skill is requisite, and it is also strictly essential that the artist himself possess a sound practical knowledge of the objects he is about to represent, or in nine cases out of ten his productions will not be strictly accurate and hence entirely useless to the scientific student, however beautiful they may appear to an ordinary and general observer. The sensitive feelings of many a true naturalist have again and again been subjected to severe shocks by would be artists, who in painting their

subjects have introduced some one or more natural objects as accessories, which latter are but too frequently wretched burlesques on what they are intended to represent. These defects may it is true be apparent to none but scientific men, still the fault remains the same, though not detected by an ordinary observer, for every representation of Nature in her happiest mood loses in beauty just in proportion as it departs from truth. Every artist should study as much of Natural History as will enable him to avoid these but too common errors.

Another incongruity commonly to be met with in landscapes, is where flowering plants are grouped in the foreground without due regard being paid as to the particular seasons at which they flower. If the plants never produce their blossoms simultaneously in a state of nature, they should not be made to do so on the canvas. Artists, however skilful and perfect they may be, will find that Nature is quite beautiful enough for our mortal eyes when truthfully copied, and yet some of us are so very ambitious as to attempt to paint the rose herself, instead of being content to copy her.

Those who may wish to see really beautifully executed scientific drawings should go to the British Museum, and obtain permission to examine the splendid collection made by the late Francis Bauer, Esq. Bauer was an excellent microscopist and a close and attentive disciple

of Nature, while the collection of valuable drawings he left behind has been but rarely rivalled and never excelled. The late Dr. John Lindley, was never tired of praising the beauties of this grand collection, part of which he reproduced in his "Illustrations of Orchidaceous Plants." Again Sowerby did much towards diffusing a thorough knowledge of British plants by the, in many cases, excellent illustrations published in Sir J. E. Smith's standard work "English Botany." Sir W. J. Hooker, Holden, Miss Drake, Mrs. Withers, and J. Andrews, are names familiar to all who have taken an interest in the illustrations of horticultural and botanical periodicals. Of more modern botanical artists we need say but little, since their productions are ever before us, but we should not fail to mention W. H. Fitch, Esq., F.L.S., Worthington G. Smith, Esq., F.L.S., also an excellent engraver of botanical subjects, and last but not least, the talented transatlantic botanical artist, Mr. Isaac Sprague. It should be noted that Mr. Fitch transfers his own drawings to the stone, thus ensuring correctness, and if we turn to the pages of the "Botanical Magazine," edited by Dr. J. D. Hooker, C.B., (himself an accomplished artist) we shall find an unbroken series of about 2,000 magnificent plates by this truly great and graphic delineator of botanical subjects, to whom I am indebted for many of the hints contained in this handbook.

In writing this *brochure* on Botanical Drawing I have

been mainly influenced by the knowledge that the want of such a handbook is greatly felt by horticulturalists, botanical travellers, and naturalists generally. The only attempt made to supply this want, so far as I am aware, is the few remarks of Schleiden in his admirable little work "The Plant," and the series of papers contributed to the "Gardeners' Chronicle," by Mr. Fitch, a year or two ago.

I am indebted to Thomas Moore, Esq., F.R.H.S., for cuts Nos. 15 and 16, and to W. Robinson, Esq., F.L.S., for No. 18. All the illustrations, with these exceptions, have been specially designed and engraved for this work.

F. W. BURBIDGE.

Manchester, 1873.

# BOTANICAL DRAWING.

---

## INTRODUCTORY REMARKS.

THE first great essential in connection with representations of scientific objects of all kinds is *correctness*, hence it follows that the student must practice drawing systematically, and persevere until this object is attained. No matter how beautifully finished a drawing may be from an artistic point of view, if it lacks correctness it is not only useless to the botanist or naturalist, but worse than useless, since it only serves to promulgate an erroneous impression instead of a truthful one. While the student is practising with his pencil he should not neglect to obtain some practical knowledge of Botany. This he will do easily and agreeably with any handbook, Oliver's "Elementary Botany," or Master's "Botany for Beginners" being the best. The student should bear in mind one fact of great importance, viz.: to

obtain the flowers mentioned in his handbook, and with a pen-knife and lens he should cut open, examine, and compare every kind within his reach. By so doing a vast amount of real knowledge relating to Structural Botany will be attained, that cannot be acquired in any other way than by practical experience of this kind. It must be thoroughly understood that books—this one included—will not supply the knowledge actually required, though they may smooth the way to its attainment. The mere mechanical difficulty of drawing any object will disappear in proportion to the student's powers of *seeing* and *understanding*. As the perceptive faculties of the mind become quickened and improved by practice, the process of drawing will not only become much easier to the artist, but his productions will become valuable for reference, nearly in exact proportion to his knowledge and comprehension of the object represented.

A rough pen and ink sketch from the hand of a botanist who thoroughly comprehends the object he is representing, is far preferable from a scientific point of view to the most beautifully finished and highly laboured drawing of a mere draughtsman, who has no technical knowledge of what he is attempting to delineate. The one sees perfectly clear as in broad daylight, fully comprehending the object before him in every particular, while the other is groping in the dark. A drawing, however correct, is of course surpassed by the actual specimen

if obtainable, hence it follows that the evidence of a drawing, however faithful, is only worth receiving when the originals are not at hand. A correct drawing is directly instructive compared with a rough sketch, which however graphically depicted can only be in some degree suggestive to our minds, still a sketch is often far more instructive than the most carefully worded description. Our written language, or at least its smallest subdivisions were originally derived from rude drawings intended to represent various natural objects, and every day we are reverting more and more to this primitive kind of educational appliance, and are employing illustrations by the thousand to connect scenes, objects, and passing events with our minds.

The facile touch, and quick and correct perceptive faculties of experienced artists can only be obtained by constant application and well directed study. The young or inexperienced observer of nature and art must make up his mind to surmount difficulties which will come thick and fast in his way to fame. He must face these bravely since they are incidental to every pursuit alike, and if the tyro fails occasionally, it will generally be found that he learns as much, or often more from his failures than from what he imagines to be a success.

A good technical knowledge of geometry and perspective are highly essential to the students' progress, as a knowledge of these principles,—the grammar of art,

will prevent his committing any vagaries either in parallelism or proportion, both of which are easily and indeed unconsciously perpetrated unless the student comprehends the axioms or truisms of the above.

When anyone attempts either writing or drawing for the first time, the result is a series of more or less awkward curved lines. The reason of this invariable result is simple, the eye is uneducated and does not see properly, while there is but very little sympathy between that organ and the executive agent—the hand.

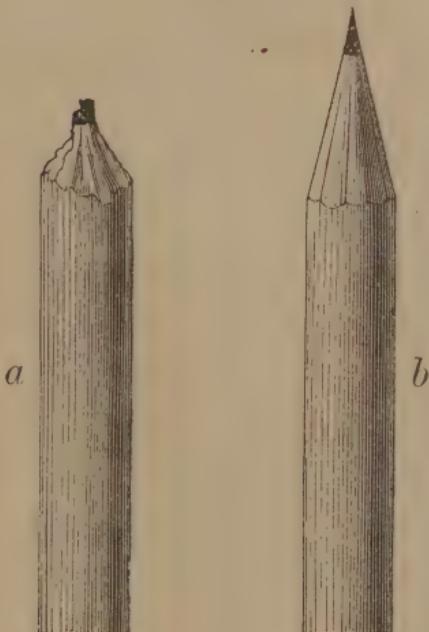
As the student proceeds, however, the sympathy between the eye and hand becomes stronger, and his productions better in inverse proportion. Anyone interested in plants and their attendant flowers and seed-vessels, or fruits, may become a tolerably correct and reliable botanical draughtsman in a comparatively short time, if he commence to observe and study this fascinating art with patience and assiduity. The student must not be disheartened by a few failures at the commencement of his career, since our greatest artists have each and all met with these in their turn, and have only reached their present high standing by great labour and silent but determined perseverance. The writer of this has studied the art under many disadvantages, with what results remains to be seen and answered by those more competent to judge and pass an unbiased opinion than himself. It may, however, be some slight encourage-

ment for the student to know that my own success has been attained by private study and practice. We will now pass on to the practical lessons in drawing flowers and plants for scientific purposes.

### MATERIALS FOR DRAWING.

The student need not go to any great expense in obtaining materials with which to commence his studies, a sheet of good drawing paper, an H.B. pencil, and a stock of patient perseverance will enable him to make a creditable beginning. A small drawing board will be very useful on which to fasten the paper upon which the subject is to be drawn. At first the paper may be fastened in its place on the board by four brass-headed drawing pins, one at each corner, but as the student progresses in the art, and begins to use colours, then the paper must be strained tightly by being damped all over with a clean sponge and neatly glued around its margins. As it dries, it will then become as tight as a drum-head, and be quite firm for either drawing or colouring. I must here take the opportunity of impressing a fact of great importance upon the young draughtsman, viz., *never attempt to shade or colour a subject until a perfectly correct outline has been obtained.* To attempt the colouring of an object badly drawn only makes bad worse, and is simply so much time and trouble thrown away.

Paper, a pencil or two, and a small drawing board are all the learner will require until he can draw an object correctly. I may here remark that most learners have a very bad idea of sharpening or pointing their pencils. To point a pencil properly, it should be cut neatly with a sharp knife until the point resemble Fig. *b*. Fig. *a* shows the student what to avoid. After the



How to point a pencil.

pencil has been cut as evenly as possible with the knife, the point may be improved by the pencil being held in a sloping direction and rubbed gently on a piece of coarse

waste paper, turning it round at the same time. As the tyro proceeds in his pursuit, other little conveniences in the way of materials will suggest themselves to him, and may be obtained from time to time.

A box of colours containing thirteen half-cakes will cost from fifteen to twenty shillings, and these with a few camel's hair pencils of different sizes, and a flat sable or two will be all the student will require in the way of colouring materials. The following is a list of colours in general use by botanical artists and professional flower painters.

Crimson Lake	Gamboge.
Pink Madder.	Indian Yellow.
Indian Red.	Chrome Yellow, No. 1.
Scarlet or Vermilion.	"      "      No. 3.
Carmine.	Lemon Yellow.
Indigo.	Vandyke Brown.
Cobalt.	Sepia.
	French Blue.
Smalt.	Chinese White.
	Ivory Black.

Most of these colours will be more convenient for working if in a moist state of preparation. A small sponge or two, and a bottle of gum-arabic, or water colour megilp, if not actually essential are extremely convenient.

A palette of chinaware is generally used, on which to rub, or mix the colours, but if this is not at hand, a small plate of ordinary window glass is an excellent substitute.

## LEAVES.

Before attempting to delineate any object, the student should regard it attentively for a few minutes, being particularly careful to note both its *form* and also its *size*. It is very good practice for the beginner to obtain a common rule, and having carefully noted any precise length as defined by the lines and figures on its surface, to attempt to draw lines on his paper of equal length. By so doing he will impress the relative length of the divisions upon his mind, or to use a common expression, carry them in his eye, and this result will be of great service to him in estimating the length and relative breadth of leaves, petals, and other objects. A large leaf is a first rate study for the tyro. Having obtained one and placed it in a convenient position before him, let him carefully observe its length and breadth, marking whether the central axis or midrib is very much curved or comparatively straight. Now draw a line as near as possible the length of the leaf, being careful to imitate the degree of curvature as correctly as possible.

This done properly, proceed to treat each individual

vein which branches off at a more or less acute angle from the midrib in the same manner, noting the precise distances they are apart, their length and degree of curvature. These *minutiæ* may be rather difficult to attain correctly the first time they are attempted, and the student who would ultimately excel, must practice patiently until these trifling primary obstacles are overcome. The veins spring at about the same angle from the midrib, hence they are nearly if not quite parallel, that is equi-distant from each other for their entire length. The student should practice drawing curved parallel lines on any piece of waste paper, they being rather difficult to draw at first. Having finished the veins, the outline of the leaf may be gently defined with a few light touches, and then drawn boldly with a firm stroke. Now it will be seen that if the midrib has been drawn correctly, and the veins added at the proper distances and with correctness as regards length, then the general outline of the leaf will be to a great extent defined, or the outline of the leaves may be faintly indicated before the veins are added, as this will insure their being drawn of the proper length.

The midrib and lateral veins of leaves should generally be drawn first. This is particularly necessary in order to correctly represent some of the more finely cut Fern fronds (see Fig. 1), or the decompound leaves of um-

FIG. 1.



Simple and compound Fern fronds studied from the "flat." The figure in the left hand lower corner represents a leaf of *Cyanophyllum*, showing the peculiar arrangement of the primary and secondary veins in Melastomads.

belliferous and other plants. The student should practice for some time until he can represent effectively any plane body from the "flat" as it is technically called. When he can draw flat objects—as simple leaves, correctly,

both as regards form and size, he may then begin to study leaves in perspective. Now if the student will

FIG. 2.



Simple and compound leaves studied from the "flat."

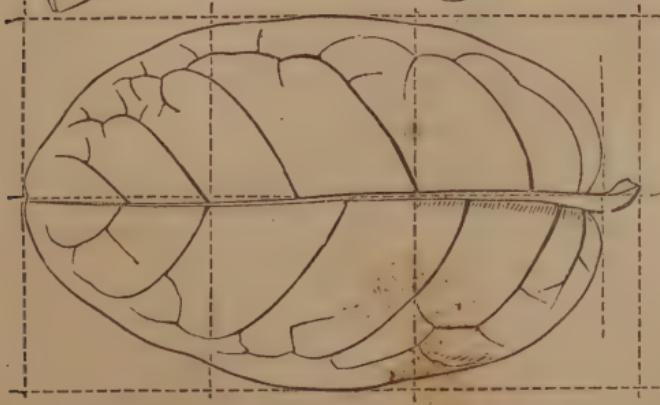
obtain a small branch of some common shrub, the Laurel or Rhododendron for example, and carefully examine it when placed before him, he will see at once that the leaves do not all lie in the same position, or in the same plane, or he may pluck a single leaf and hold it in his hand in different positions, when he will observe that its shape appears altered according to the position in which

it is held. The student should practice sketching leaves placed in various positions. He will find some of the positions in which the leaves appear very much fore-

FIG. 3.



Oblong leaf from the "flat."



Leaves in-perspective.

shortened rather difficult to represent correctly at first, but by carefully observing, and patiently working this will soon be overcome, and the study of perspective as exemplified by foliage will prove a valuable lesson. We here show some leaves of different plants in a variety of positions, which will assist the student in his progress. Perspective must be carefully studied by the beginner, as the beauty and correctness of his drawing will depend greatly on his sound practical knowledge of this subject. An experienced botanical artist can readily represent either foliage or flowers in a variety of positions without the models before him, and it is this perfect knowledge of perspective that enables them to make both correct and beautiful drawings of plants after they have been subjected to drying and pressing for the herbarium. In making scientific drawings from these to some extent mutilated specimens, the parts are represented correctly, so far as regards size, form, and texture, due allowance being made for shrivelling during the process of dessication to which they have been subjected. The colour has in most instances to be added from descriptions. Botanical artists who draw from dried herbarium specimens always feel thankful when the collector adds the exact size of the different parts of the flower (either in inches or lines) to his descriptions and memoranda. The natural arrangement of a drawing made from a dried specimen is good or bad according to the perfect or

indifferent knowledge of perspective possessed by the artist.

In my own practice I find flowers as easy, or even easier to draw than foliage, since their forms are more definite and their positions as a rule less varied.

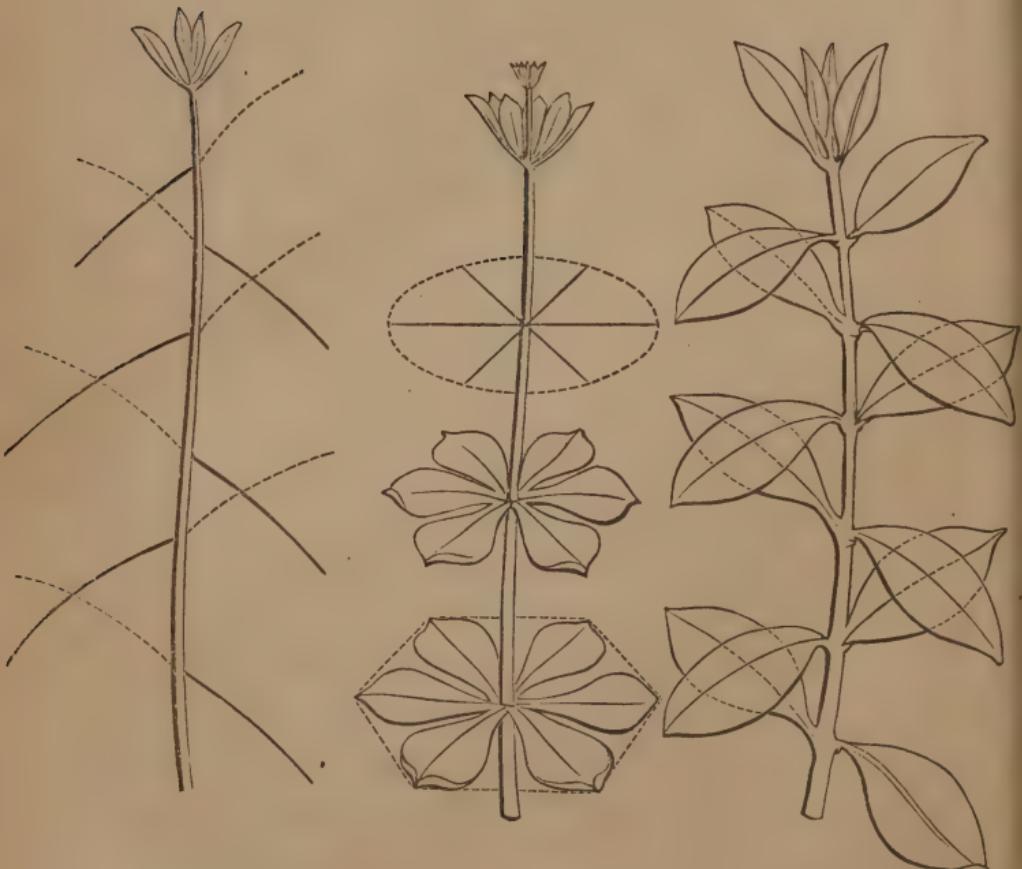
The student must pay particular attention to the manner in which leaves are borne on the stems or branches of plants. On some branches they are pendulous or erect, on others nearly horizontal, while other plants again, as Yuccas, Aloes, and Agaves for example, have leaves in all the above positions on each individual plant.

In making botanical drawings everything should be clearly shown, and there must be as much variety in the position of the leaves and flowers as possible. Many leaves are smooth or glabrous in front and shaggy behind, this peculiarity must be correctly represented. In defining the margins of woolly leaves or leaves of great substance, the student will find a soft pencil give a much better effect than a very hard one, while a hard pencil is best for the definite outlines of flowers and their dissections. Be particularly careful to show the petioles of some of the leaves, and carefully note whether the leaves are arranged alternately, opposite, verticillate or distichous, and also note if they are furnished with stipules or other appendages, as hairs, warts, or glands on the petiole or lamina; if there is evidence of these being present, care-

fully examine them through your pocket lens, (an indispensable companion to the botanical student and draughtsman alike), and if their being borne by the species is unusual, carefully represent them in your drawing, magnified when necessary, so as to be easily observed and noted.

Opposite leaves are best represented diagonally, as

FIG. 4.



Opposite and verticillate leaves.

shown in the accompanying sketch, which also gives the beginner an idea of the principle on which to draw verticillate leaves.

Botanical drawing, in common with every other pursuit, must be studied systematically, and the student of this art should carefully observe the frame work or guide lines of the sketches figured above.

Never attempt to make a drawing without having first drawn such a series of simple lines or frame-work as the nature of the subject requires. If these guiding lines are drawn correctly in the first place, the subject is easily comprehended, and it becomes nearly impossible to make a mistake in the arrangement of the leaves on the stems or branches intended to be pourtrayed.

Be exact in observing the angle made by the mid-rib of the leaves with the axis or stem, and draw your guide lines accordingly, then the habit, whether erect, horizontal, or drooping, is shown with equal ease and facility. If the beginner has carefully followed the advice here given, he will begin to see and fully comprehend the principles followed in order to represent correctly the stems and foliage of plants.

When these principles are fully understood by the student, he will cease to wonder at the productions of artists who, previous to his attaining this knowledge, had surprised him with the great panicles of blossoms,

and the profusion of foliage introduced into their drawings.

If the learner has comprehended our meaning, he will immediately refer any superficial object he wishes to represent on paper, to either the square, circle, triangle, or to the polygon, that best enables him to draw his subject correctly.

After these principles are understood, the most complicated series of branches and foliage becomes simplified, and their representation comparatively easy.

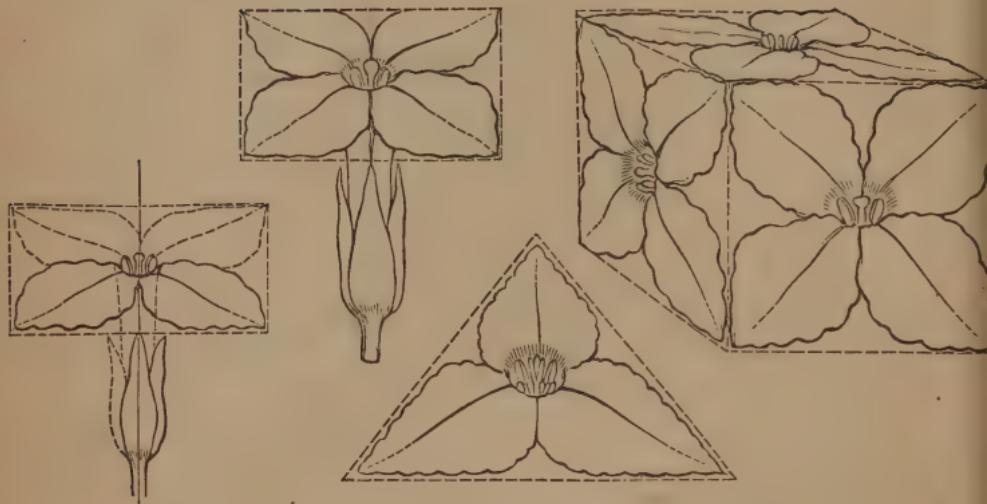
#### REGULAR FLOWERS.

If the student has paid attention to structural botany as previously recommended, he will, by the time he has arrived at our present stage, be conversant to some extent with the anatomy of flowers. He should pay particular attention to the relative size of the separate organs, such as sepals, petals, stamens, and ovary, or seed vessel, for next to the *insertion* of the different organs, perhaps their relative or proportionate size has most to do in modifying *structure*. It is very annoying to find, after spending one's time in making a drawing, that it is incorrect, and in order to avoid being criticised, and perhaps ridiculed by botanists for inconsistency with regard to *structure* or *proportion*, I must advise the student to carefully note the *relative* size and *position* of

various organs before he commences to draw them. Nearly all regular flowers, that is flowers with their petals or petaloid subdivisions *equal*, and many irregular ones, may be correctly drawn by sketching either a square, triangle, or circle faintly, and as near to the exact diameter of the expanded flower as possible. These primary figures may be subdivided by lines, or the width of the floral segments may be ticked off, and then the flower is easily sketched in. It is generally best to commence by drawing the centre or eye of the flower when a full view is attempted. When the flower is seen sideways, however, or in perspective, it is often necessary to draw the parts that lie nearest the eye first. Any regular flower may be selected for study, as a Primrose, Auricula, Phlox, Dianthus, Wall-flower, or common Dog-rose, according to the season of the year. All these flowers and a multitude of others are easily drawn, either individually as single flowers, or collectively as grouped in the flower spike, or inflorescence. We will take the wall-flower (*Cheiranthus*) as our first illustration. The wall-flower may be taken as the type of a great number of different species belonging to the order *Cruciferæ* or *Brassicaceæ*, most of which have four oblong petals arranged in a cruciform manner, and together with *Daphnes*, *Bouvardias*, and other plants (also bearing cruciform flowers) are easily represented by first drawing a square, or a square in perspec-

tive according to the position of the flower as shown in the accompanying sketch. I need scarcely observe that

FIG. 5.



Ternate, and cruciferous flowers.

a square in perspective, when seen from the front, appears to the eye as a parallelogram. The sketch will however show the student more than any amount of writing. A soft pencil used lightly is best for sketching guide lines and outlines, and when these latter are correctly drawn, they may be defined with a harder pencil, and by firm bold strokes, after which the primary lines may easily be removed by the use of either India rubber or bread.

Some few endogenous plants bear ternate flowers—that is triangular in outline—these may be circumscribed by a triangular figure as shown in the above illustration.

We now come to consider the vast number of plants that bear flowers circular in outline, though varying immensely in the number and relative size of their sub-

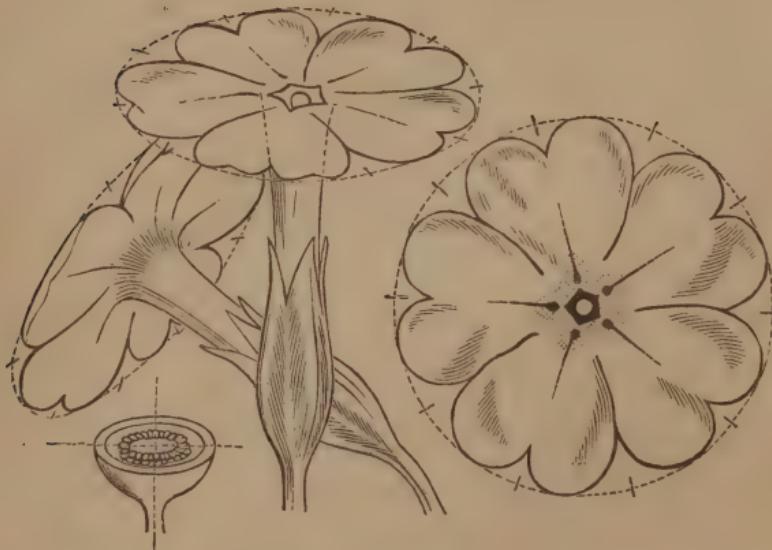
FIG. 6.



Dipladenia amoena.

divisions. To draw circular flowers g-rose,  
Passion-flower, and many thousands ants, it  
is best to first sketch a circle of the meter as  
the specimen before you, and then to subdivide it with  
right lines, or tick off the relative sizes of the divisions  
on its circumference. Regular flowers, seen diagonally,  
are circumscribed by circles in perspective, *i.e.*, an  
ellipse as shown in our illustration. If the student will

FIG. 7.



Primula flowers in different positions. Note the way in which the divisions of the flower are ticked off on the circles by which they are circumscribed, also the simple method employed in drawing a transverse section of the ovary, showing free central placenta. attentively examine the inflorescence of an Auricula,

FIG. 8.



COMPOSITE FLOWERS.

FIG. 8.

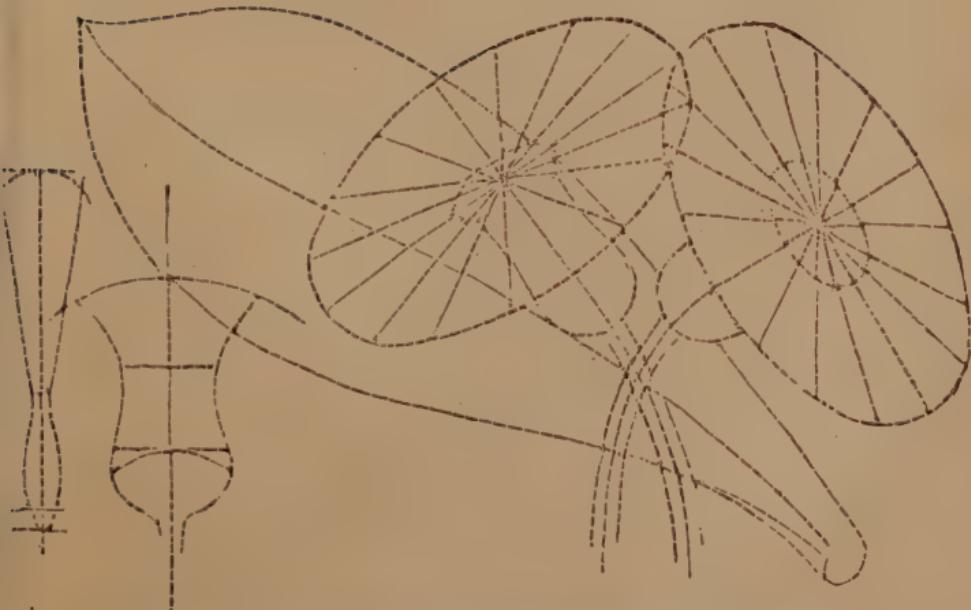


Diagram or guide-lines for drawing the above with facility.



Primula, or herbaceous Phlox, he will see that the flowers in the centre are nearly circular, while those at the sides are elliptical, and if he were to attempt to represent such an inflorescence without noting and paying particular attention to this fact, he would only be disheartened at his want of success. It is impossible to give an idea of solidity and roundness to the drawing, unless perspective is carefully copied from the originals. If every flower in the spike is drawn in the same plane, no amount of shading or daubing on of bright colours can ever give it roundness, and to the educated eye of the artistic observer it is most painful to behold such drawings.

By careful practice the beginner will soon be able to draw any single flower in a variety of positions, indeed he will be surprised at the ease with which this is done, when he fully comprehends this subject of circles in perspective. Some composite flowers—the common Daisy for example—has a great number of divisions, and this is equally applicable to a great many plants belonging to the natural order of Composite. We here introduce a sketch, showing how these divisions may be quickly and correctly introduced in a drawing. Great care should be taken to ascertain whether these divisions or ray-florets, as they are called, occur in regular numbers in the same species. If so, carefully put in the proper number and no more. These ray-florets must be

examined carefully, and the number of teeth or serratures at their apices noted. In making drawings of composite plants, it is usual to introduce enlarged representations of a single ray-floret and also one from the disc or eye of the flower. The pappus must also be noticed, and some of the serrated hairs, and the apex of the style must be shown, magnified sufficiently large to be easily seen.

As the student proceeds in his studies and attains greater facility with his pencil, he will not require to draw so many guide lines, since he will find himself imagining their existence on his paper, but he must not hurry to draw without them as they are an infallible guide to correctness.

I would particularly recommend the tyro to use his lens—which should be a good one—in examining every separate organ of the flowers with which he daily comes in contact, noting their several peculiarities and the various appendages with which they are in many cases furnished. It is all important to note the precise number of all the organs even in the case of a group of flowers studied from a pure artistic point of view, and the artist in neglecting to do this commits a great mistake, neglect of this kind would soon ruin the reputation of any botanical artist, however skilful he might be with his pencil artistically. The student should guard against malformations and monstrosities, and if he has any doubts on the structure of any organ he should

consult Lindley's "Vegetable Kingdom," or refer to other botanical works by reliable authorities as these will guide him in his studies to a great extent.

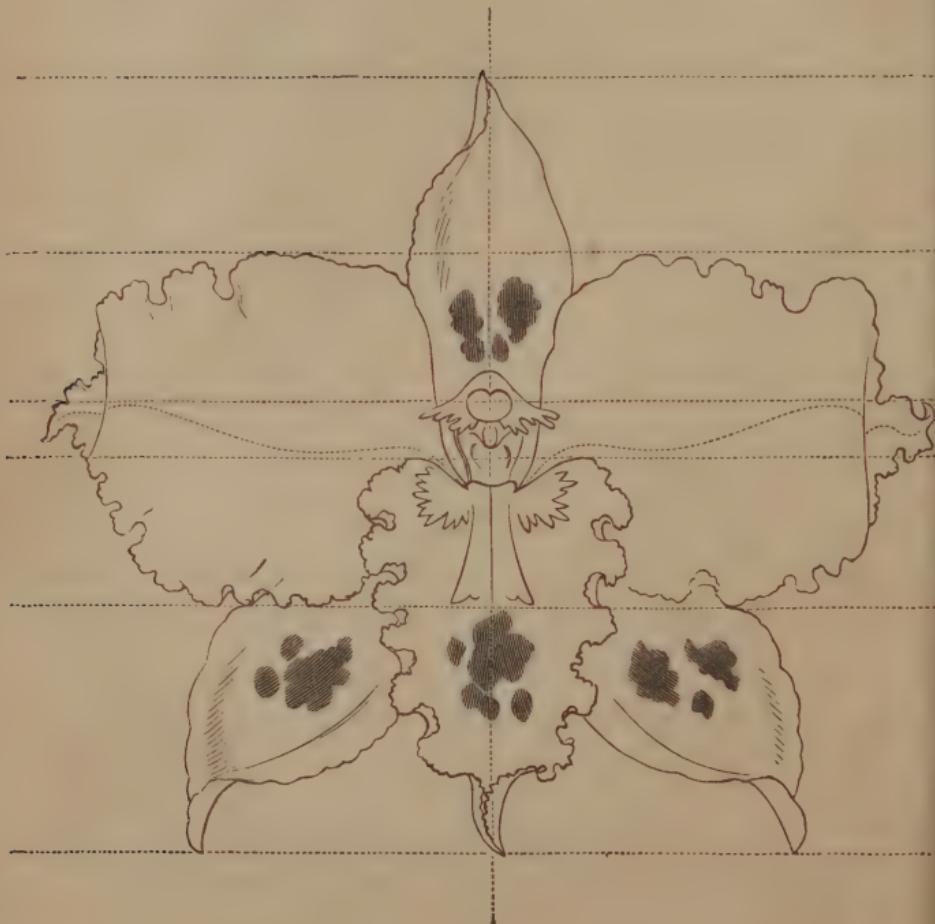
### IRREGULAR FLOWERS.

We have now to study those plants which bear what are called by botanists irregular flowers, that is their petals do not all agree in size, form, or arrangement. There are several great natural orders of plants that bear irregular flowers such as Labiatæ, Orchideæ, Violaceæ, Schrofulariaceæ, Acanthaceæ, Gesneraceæ, and others.

Of these, Orchideæ are justly celebrated both by botanists and horticulturalists for their superlative beauty. In this order the botanical artist finds some of the most beautiful as well as some of the most peculiar forms in nature, while their colours are as variable as the rainbow and almost as ethereal and difficult to represent on paper, so subtly are the various tints blended in their crystalline segments. They are rather difficult to draw until their structure is fully comprehended. An Orchid flower normally consists of an outer whorl of three *sepals*, a second inner whorl of three petals, one of which is generally convolute or otherwise differently shaped to the others, and is called the lip or *labellum*. The lip often bears hairs or warts, but more especially a definite number of plates (*lamellæ*) or tooth-like appendages, which are

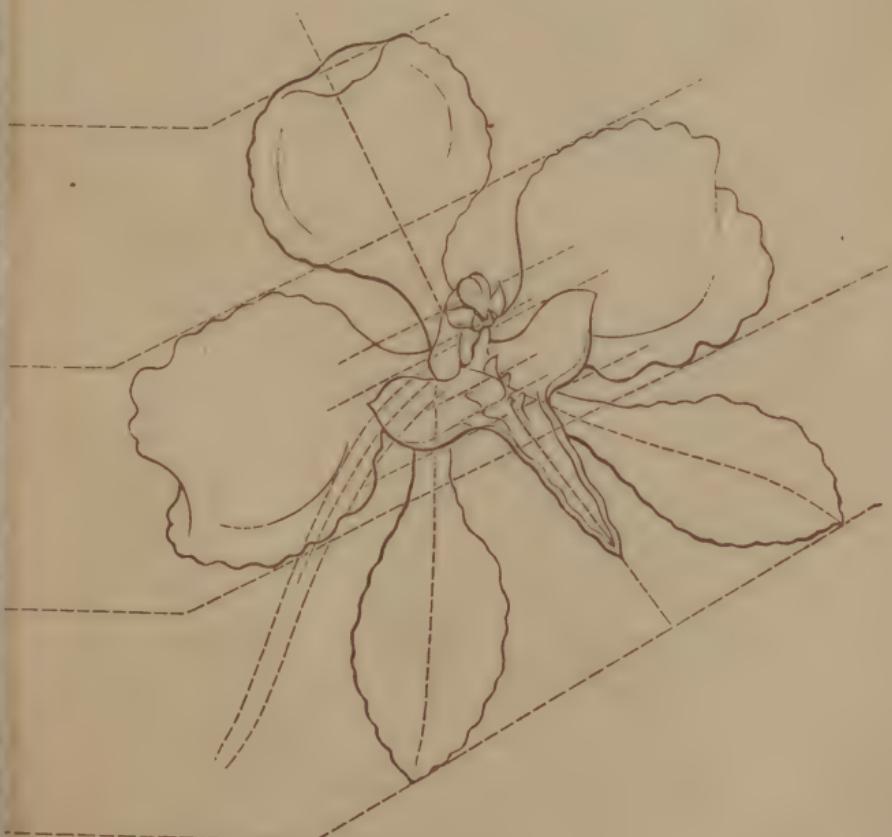
collectively called the "crest." The student must pay careful attention to the number and arrangement of these plates and tubercles, as they often aid in distinguishing different species from each other. The fleshy process above the lip is the column, and at its apex, in most cases, the anthercase and pollen-masses will be found, and

FIG. 9.



neath these the stigmatic cavity. We here introduce an illustration showing a flower of *Odontoglossum* (see Fig. 9). In drawing an orchid flower the student should commence by sketching the column as an axis round which all the other parts are arranged. After the column and lip are defined the two upper petals should be added and the sepals drawn last.

FIG. 10.



Diagonal view of orchid flower.

In drawing a flower from behind, which is often necessary to show the spur or keel, the sepals must be drawn first, then the petals, and lastly the lip and column if they are in sight. Parallel lines are of great use to the student in his representations of these protean plants, and in the accompanying sketches we show how these assist in preserving the relative length, breadth, and position of the floral segments, no matter in what position the flowers may be drawn. These parallel lines are specially useful in drawing side views of these curious flowers, and I need hardly inform the student that they are equally applicable to the flowers of other plants, wherever side views are necessary.

FIG. II.

Sketch of *Oncidium* flowers (front and side view.)

Though orchids are called irregular, their flowers consist

of a definite number of parts. These parts, however, vary greatly, indeed, but few flowers show the different results of *cohesion*, *adhesion*, and *suppression* of organs so plainly as orchideous plants. In the Linnean Society's Transactions (XVII. p. 551), is an interesting account of the production of flowers of three previously supposed genera, *Catasetum*, *Myanthus*, and *Monocanthus*, on the same spike. Another similar anomaly afterwards flowered under cultivation at Chatsworth, which added additional weight to the observations previously made by Sir R. Schomburgh in Demerara, and published as above. Plants, under cultivation, vary greatly in the size and colour of their flowers, and in the relative length and breadth of their sepals, petals, and lip. There are critics in the orchid world who, when in their most cantankerous moods, will not hesitate to condemn the drawings which faithfully represent certain so called species, so we would advise the artist to preserve or dry his specimen whenever practicable, so that he may be in a position to vindicate himself should occasion require it.

In making drawings of orchids, the artist should introduce the entire plant if small, together with magnified views (front and side as in Fig. 11) of a flower of minute but often highly interesting species, and any other structural details should be added that will assist in giving a good idea of its anatomy and arrangement of parts. When drawing

larger species, represent a pseudo bulb, or stem or two with their attendant leaves and flower spike, or spikes, according to the size of the specimen, or the space at your command (See Fig. 12). A view of the lip, showing the arrangement of plates on its crest or other peculiarity, together with a view of the column, pollen masses, anthera or other interesting analysis should be introduced in the drawing. These details must be shown magnified when the parts are naturally too small to show *distinctly* when drawn of their natural diameters. Some stiff growing orchids are rather difficult to arrange, or group artistically on paper, but we will show how to do this as well as practicable in the Chapter on Arrangement.

If the student has carefully followed the advice previously given, and practiced drawing with assiduity, he will comprehend the principles laid down in this Chapter and see that they are applicable to the great majority of irregular flowers. The suggestions already given ought to have led to his forming correct and useful ideas of his own, for at the risk of repetition, I must strive to impress on the minds of all learners the fact that written instructions in any art or science, merely smooth the student's path in the attainment of knowledge. The real knowledge itself, or the *power to do*, can only be obtained by patient thoughtful work and unswerving determination to succeed.

In all irregular flowers, it is essential to note the

relative size as well as arrangement of the different organs, petaloid segments, &c., and by this time the student will be in a position to represent these correctly if he has carefully studied according to our directions. Side views of irregular flowers show the position of the floral segments and their insertion in the calyx tube, and a flower cut in half longitudinally gives a very good idea of the internal anatomy. In the case of Labiates it is often necessary to give a front and back, or side, view of the anthers, filaments, and the connective, as these are often highly interesting and important from a botanical point of view, as are also the number of lobes to the ovary or seed vessel.

We shall now just glance at the means adopted by artists in sketching fruits and seeds.

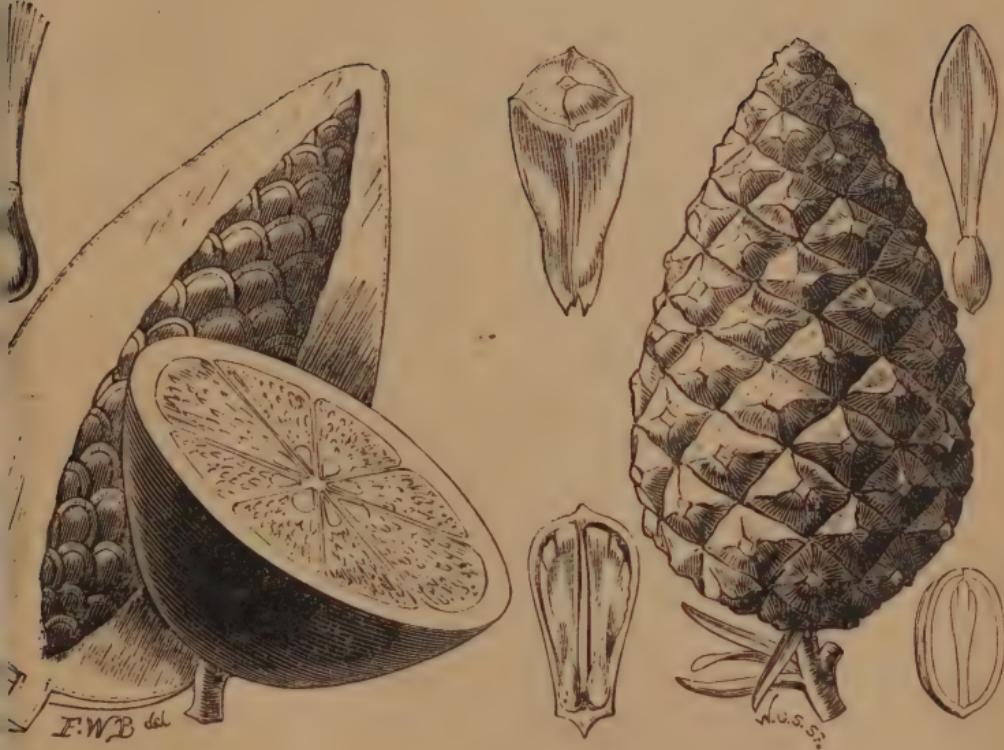
#### FRUITS AND SEEDS.

It is sometimes advisable to figure the fruit and occasionally a seed or two magnified, when figuring any new or interesting plant. Fruits, as a rule, are easily drawn, still a few hints may be of service to the student, who will find the shape and structure of some fruits much more complicated than he had supposed. The fruits of some plants, ornamental gourds for example, are more interesting than the flowers, still in making a drawing both should be included. The cones of some Coniferae

are complex in structure and difficult to manage successfully at first, but a little practice will soon enable the student to represent them with ease. When fruit is represented in a drawing, a section should be given transversely, or longitudinally, as the case may require, to show internal structure and arrangement. Many fruits have a definite number of cells, and this precise number must be carefully represented in their proper relative positions.

Particular attention must be given to the achenes of Compositeæ, and to the seeds (fruits) of Umbelliferous plants. If the student carefully regards an umbelliferous seed (mericarp) through his lens, he will observe a definite number of ridges or longitudinal ribs. Underneath the intervening spaces formed by these raised lines, elongated receptacles called *vittæ* are often placed. These contain an essential oil and are remarkably constant in number and arrangement in each species. Carefully represent the arrangement of these ribs and *vittæ*, as also the shape of the albumen, and to show the *vittæ* make a transverse section with a sharp scalpel or razor. The student will often experience some little difficulty in making sections of seeds to show position of embryo, or any other small hard substances, previous to his examining them under his lens or microscope. It is a first rate plan to have a few slips of thin glass (microscopic slides will do) and upon these the smallest seeds may be fixed with a drop of Canada

FIG. 13.



FRUITS AND SEEDS.



balsam. After this becomes dry, the seeds may be cut without any difficulty. Many seeds are very peculiar in both form and markings, indeed many species of the same genus may be defined by a microscopic examination of their seeds alone. The coatings (testa) of some seeds are beautifully pitted, others again are striate or reticulate, while others are covered with tubercles, as minute, spinose or dentate appendages. In making drawings of coniferous plants pay careful attention to the number of

FIG. 14.

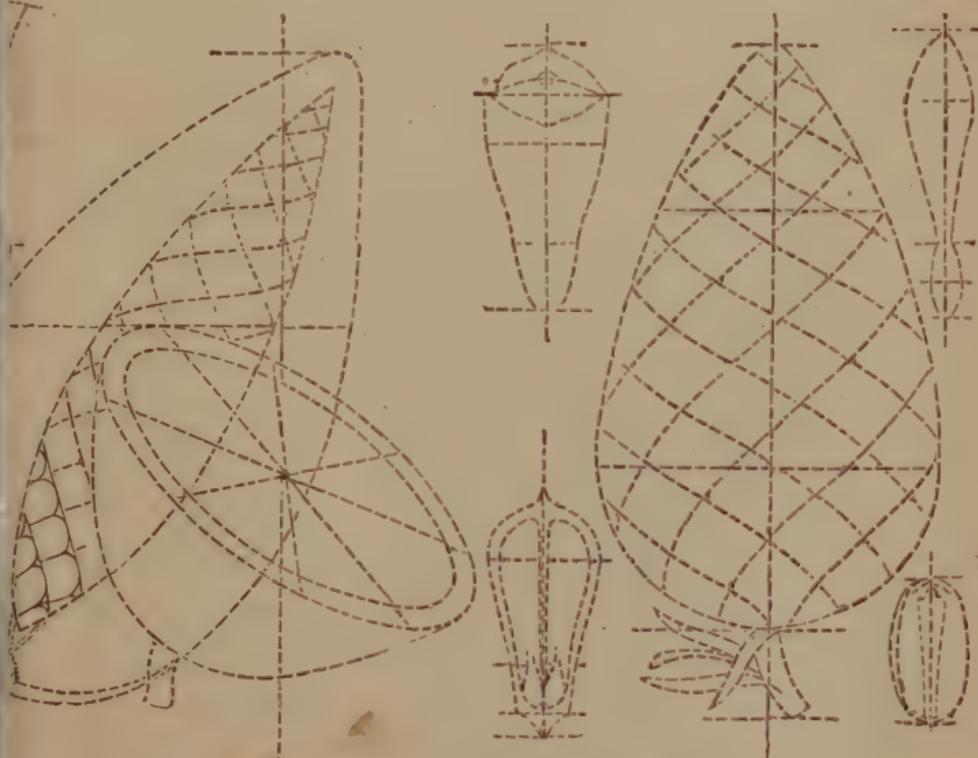


Diagram showing how fruits, &c., may be sketched correctly.

leaves borne in a fascicle, and define the size and exact shape of the cones, adding correct figures of a single scale, and the enclosed winged seeds.

In the accompanying sketch is shown the method adopted to correctly draw cones of coniferous plants, together with other fruits and a few seeds to show the treatment they should receive. Fruits when carefully drawn and shaded add greatly to the effect of a botanical drawing.

It is not always possible to add views of the fruit or seeds, at the same time as the flowers, but in some plants the most important characters lie in the structure of the fruit or seed ; in other cases they are not so important, but they are always accepted by botanists when carefully introduced.

In some plants of curious structure it is advisable to make a whole series of drawings, illustrating the habit of growth, inflorescence, fructification, together with enlarged drawings of all the separate organs, and magnified microscopic delineations of the cells and tissues. This has been done in the case of the *Victoria regia*, but perhaps better still in the case of the fourteen beautiful plates by Mr. Fitch, Dr. J. D. Hooker, C.B., and Professor Oliver, F.L.S., published in the Transactions of the Linnean Society, Vol. XXIV. I., illustrating the curious *Welwitschia mirabilis*.

## ENLARGED DETAILS OR ANALYSIS OF FLOWERS.

As previously stated, it is often necessary to give magnified views of certain important, or characteristic organs of plants, in addition to portions of the plants drawn natural size. To represent these correctly some tact and ingenuity are requisite. In some cases the artist will receive instructions as to what analysis to give in his drawing, and then all he has to do is to figure them correctly and of such a size as to be readily seen. The size of the magnified dissections should be in proportion to the size of the drawing. There is some little difficulty in representing the magnified parts in equal proportion at first, but practice soon overcomes this failing. In drawing these details the student will derive some assistance from such works as Lindley's "Vegetable Kingdom," and Baillon's "Natural History of Plants," and he should include those works in his library. Different natural orders and genera have characteristic differences in their structure, and the student should satisfy himself on this point before he adds his analysis. Great care must be taken to show the insertion, cohesion, or adhesion of the different organs. In some cases a vertical section of the flower through the ovary or seed vessel, or a flower laid open, will give all the necessary information as to the relative size and insertion of the various

organs. In some Arads, small-flowered Orchids and Papilionaceous plants, much more than this is generally necessary.

Sometimes it is requisite to give microscopic drawings of the different tissues, and the best way to do this is by the use of a camera lucida. The camera can either be used with a compound microscope, or it can be fixed on the stand of the dissecting microscope and used for sketching the outlines of solid objects, or for copying, minute details and colour (if necessary) must be added afterwards. Anyone can make microscopic drawings to scale with the aid of this useful little contrivance even, if they are not draughtsmen.

The student in using this useful instrument must keep the eye exactly over the edge of the prism so that one half of the pupil sees the object while the other half looks at the paper and pencil employed below. This instrument costs from 15*s* to 21*s*, but Dr. Beale's Neutral Glass Plate, answers every purpose of the camera, and may be had for 5*s*.

Dissections or magnified parts of the different organs should be neatly arranged. It is generally best to draw them quite upright or vertical, especially if they are regular or symmetrical. Note the scales and winged seeds of the pine cone previously figured, and which illustrates how this is easily done.

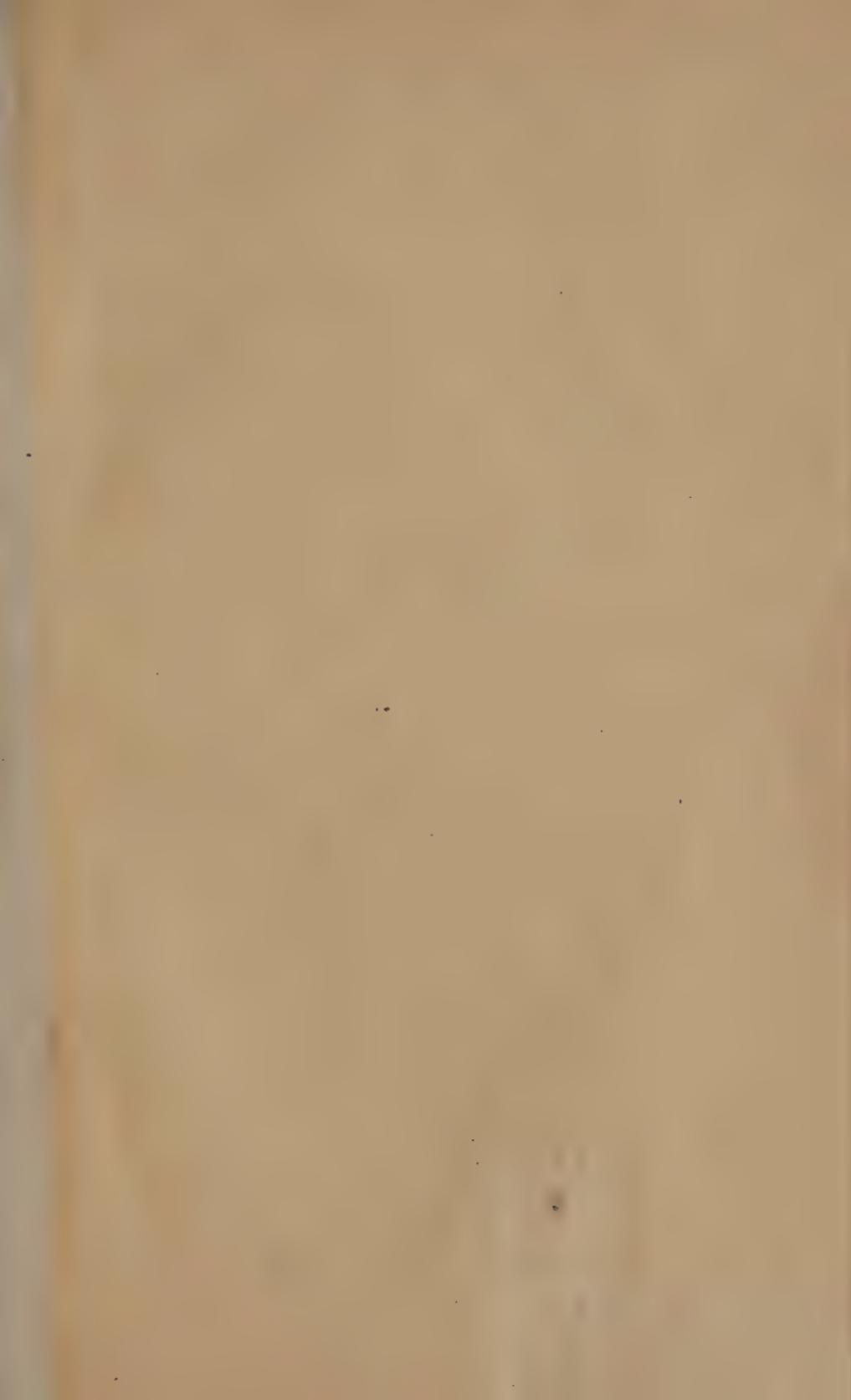
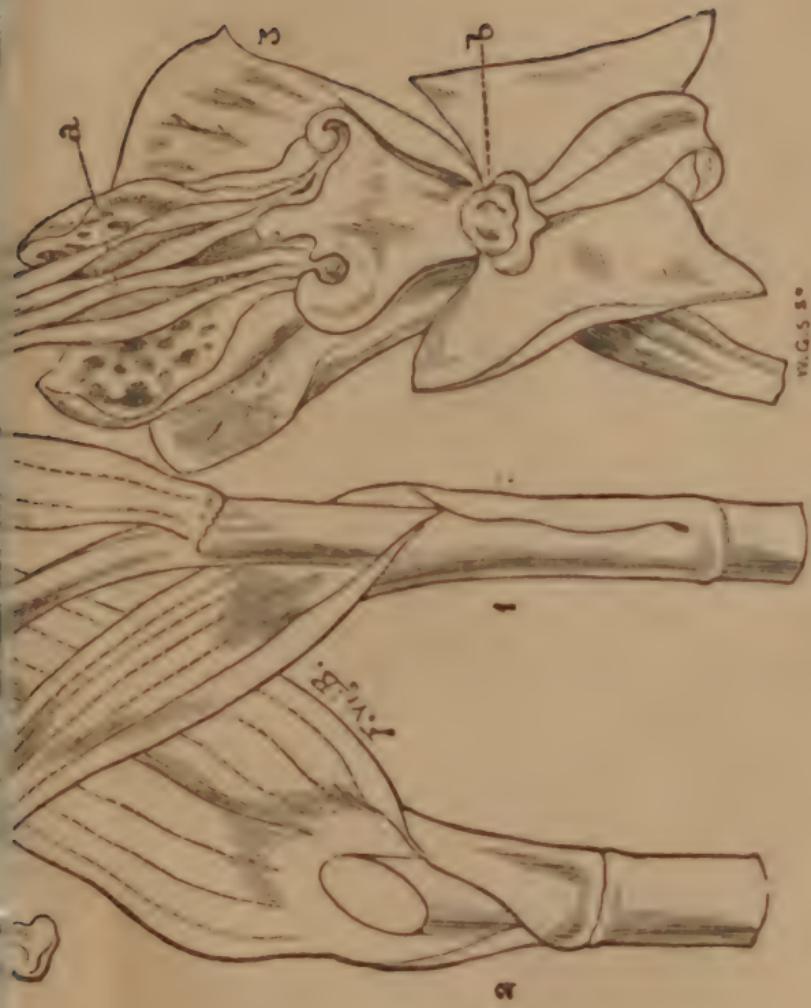


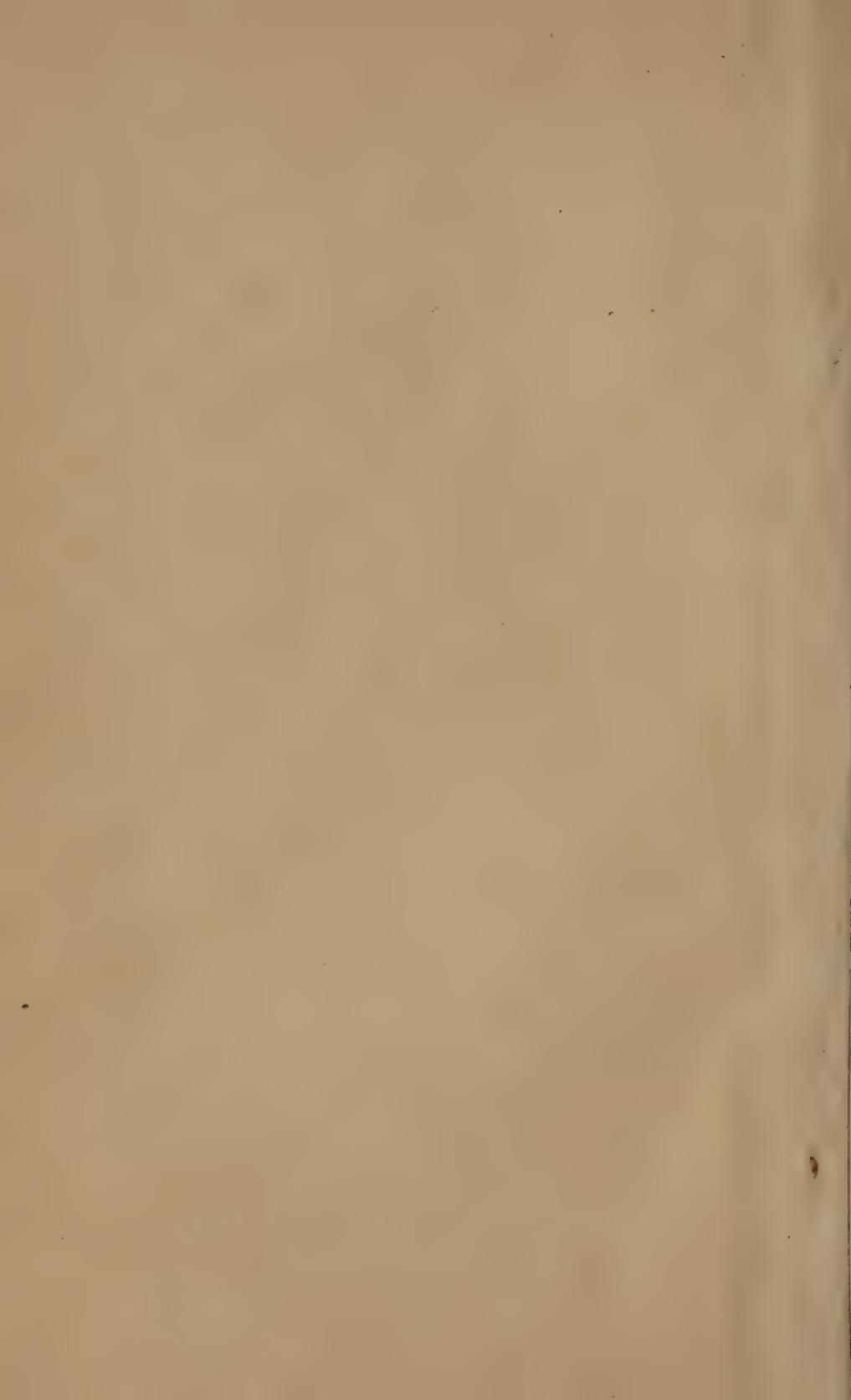
FIG. 15.





DISA.

Showing how to arrange a botanical subject neatly for a plate or illustration.



## ARRANGEMENT.

In making drawings for Horticultural or Botanical periodicals, the artist is generally limited for space, and it frequently tries his ingenuity to make the drawing fit the space he has at his command and at the same time preserve as far as possible its graceful appearance. This is particularly the case when the plant is of a stiff or rigid habit. The subject may be drawn correctly, but unless it is evenly balanced on the paper, or in the space it occupies, much of its effect is lost. Artistic arrangement in a botanical drawing, like clever grouping in figure subjects, gives additional force and vigour to good drawing. As previously explained, if a drawing is correct in every particular it is sufficient, so far as botanical science is concerned, still a drawing should not offend the taste of those who have an eye for symmetry and proportion in addition to botanical knowledge. The student will, by a little observation and patient study, soon acquire the art of arranging his sketches and drawings in a neat and compact manner.

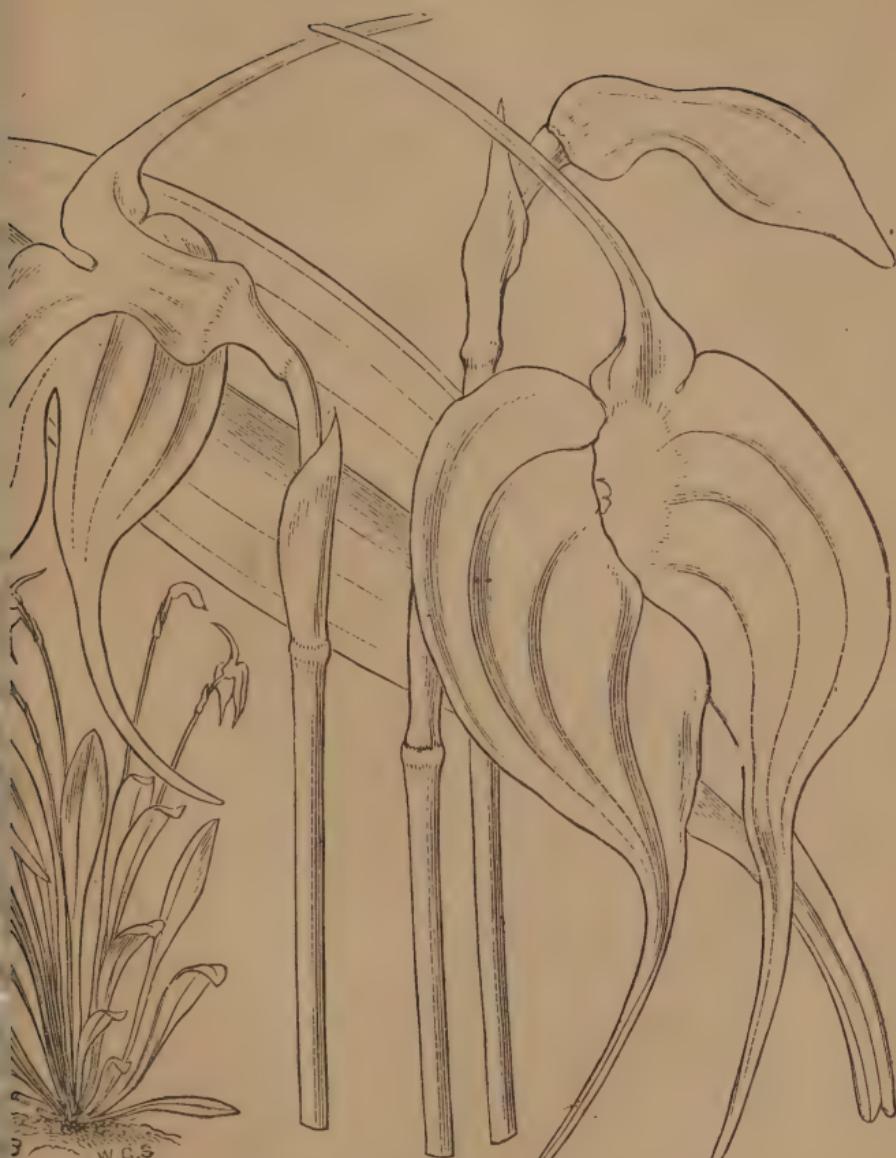
Before commencing to outline the subject about to be introduced into a drawing, the student should faintly delineate the general contour of the stem or branches, inflorescence and leaves with a soft-pencil, and at the same time should leave ample space for all necessary details or

analysis. Alter these faint lines, if necessary, until it is evident that the drawing will be well balanced on the paper, after which the outlines may be carefully sketched in. The figures here introduced will show plainly how easy this is to follow out in practice. Inattention to this simple rule is generally the cause of the many drawings we see daily, in which really beautiful and graceful plants are made to appear stiff and formal if not absolutely incorrect to the eye of the true artist. The first faint lines should be drawn through each other, after which the student must carefully outline those which appear to lie nearest the eye *first*. It is a good plan when sketching these ground lines to draw those continuously which approach the eye, and to merely dot those which recede from it as we have already shown, (see Fig. 4). If this rule is carefully carried out with leaves, stems, and flowers, all the parts will lie naturally behind each other, and there will not be any of the leaves with broken ribs, or stems in all manner of impossible positions.

If the student has access to the Botanical Magazine, and will carefully look over the beautiful drawings it contains, he may obtain many valuable hints as to arrangement, especially if he is conversant with the plants themselves from which the drawings were taken.

In arranging a drawing on a block for engraving where the space is often necessarily limited, a little tact is often necessary to convey a good idea of the flowers, foliage,

FIG. 16.



ut shows flowers and leaf of the natural size, and a reduced sketch  
ntire plant. The latter is very instructive when appended to  
drawings, as it gives an excellent idea of the habit or mode of  
nd flowering.



and other essential or interesting details. The student may refer to the figures in this work nearly all of which

FIG. 17.



Sketch showing how to arrange erect growing, or stiff habited plants.

will give him an idea of how to arrange his subject for an engraving on wood, or for the lithographic stone.

In arranging stiff or rigid plants, or parts of plants that do not curve naturally, they should not be made to do so on the paper. In this case, it is best to represent the plant cut into convenient lengths as in Fig. 17, where the plant represented is shown in two halves. Many Fern fronds, or flexuose branches, may be shown in gentle curves, and thus some idea given of their graceful character.

#### SHADING AND COLOURING.

It will be readily understood that there are three stages in botanical, as in other drawing, all of which, so far as real utility and beauty are concerned, depend on the first, viz., a good outline, for as previously stated, no amount of shade or colour will make even a tolerable drawing if the outline is defective. On the other hand, a good outline is greatly improved by careful shading, and more so still when shade and colour are both laid on judiciously. Shading gives the appearance of roundness and solidity to the mere outline, while by a careful use of colours we still more nearly approach the original. If the student will refer to the figure of the pine cone, he will see how shading is applied. In this case the rays of light are supposed to fall diagonally from the left, and it will

be seen that the upper part of the cone is in a bright light, which gradually becomes lost on the dark or shaded side.

The student would do well to obtain a good-sized fruit, or pine cone, and place it on the table under a single gas-jet. Seen in this manner, the light and shade are not so easily perceived by the tyro, but if he will now take a common dark or bull's-eye lanthorn (lowering the gas-jet at the same time), and turn the light from it on the fruit or cone, he will readily perceive the effects of light and shade. This result may be obtained in the daytime by admitting light into the room only through a round hole in the shutter. This must be arranged so that the rays of light fall on to a table, and upon the spot so illuminated fruits and some of the larger flowers may be studied for striking effects in light and shade. I merely mention this that the student may experiment for himself, and thus gain a knowledge of the theory of light and shade. In botanical drawings no great effects of either light or shade are required. Just enough shading should be used as will give a definite idea of roundness and solidity to those parts which most require it. When the artist understands the theory of shade, he can readily imagine the light to fall from any angle on to his outline and add the necessary shading, but to do this requires both study and practice. Shade may be obtained by the judicious use of

various materials, of these Indian ink, bistre, neutral tint, sepia, or the common lead pencil, are best adapted to botanical subjects. Neutral tint gives a greyish shadow over which most colours may be laid with facility. Beautiful effects of light and shade may be obtained by using Indian ink and a common lithographic pen. With a good pen on smooth paper lines may be drawn so fine as to be scarcely perceptible to the naked eye, and a skilful artist, with these simple materials, can produce a picture which even competent connoisseurs could scarcely distinguish from a fine steel engraving.

Before laying on colour the paper should be gently sponged with clean rain-water. Some colours do not mix readily with spring-water.

After the paper has become quite dry the colours may be laid on, commencing with the lightest tint and laying on darker masses of colour in the shaded parts of the drawing. Pay particular attention to this last remark, and mind the brush is well-filled with colour. It is a good exercise for the student to attempt to lay a flat wash, or simple tint, either of Indian ink or colour. He will find that when the brush is partly dry it does not distribute the colour equally, but in streaks and patches. It is only by keeping the brush well filled with colour that a thin even tint can be laid on. The student will understand that there are only three kinds of colours, viz., red, blue and yellow, and that all the many tints in

Nature are represented with these simple colours, or some of their almost infinite combinations. Red and yellow mixed together produce *orange*, blue and yellow, *green*, and blue and red, *purple*. These compounds or complimentary colours, as they are technically called, vary in intensity and tone in exact proportion to the relative quantities of each of the simple colours mixed to produce them, hence the student will find ample scope for his experimental powers with the eighteen colours we have previously recommended to his notice.

The process of colouring is simple and easily acquired for all practical scientific purposes. Indeed anyone who has application enough to persevere and draw a good outline may then be entrusted with a colour box. After the first flat tints are washed in, any amount of what is called finish may be given to the drawing by a process technically called "stippling;" this is by large or small touches with a camel's hair pencil charged with colour. The parts are touched and touched again until the intended depth and richness of colouring is obtained. Botanical drawings are generally coloured by flat washes which give all the effect that is required.

In "stippling," different tints are blended in a subtle manner, and the most beautiful effects are obtained by this process. If the student wishes to try his skill at "stippling," a peach is about as good a study as anything he can obtain. I have seen some native drawings from

Calcutta most beautifully coloured by this process, though as a rule the drawing and perspective of these Indian drawings is bad. A little careful study and practice will soon enable the beginners to make creditable drawings in colour, though it must be borne in mind that perfection is impossible, the botanical artist, however perfect, must always be a student, and never rest content with his copies of Nature's smiles.

## PICTURESQUE STUDIES.

In the foregoing series of papers, strict precision in drawing, or an exact pictorial representation of each object, has been insisted on as essential; to this rule, however, there are certain exceptions. Drawings are frequently required to illustrate the elegance of individual specimens, or well arranged groups from a decorative, or artistic point of view, and in cases like these some imaginative latitude may often be allowed to the experienced artist. Nature, when studied for artistic or picturesque effect only, is not always beautiful in the superlative degree; and general subjects, when studied with this end in view, may frequently be left to the cultivated taste, and innate feeling of the true artist, providing always that he has learned to copy nature exactly, ere he attempt to add grace and beauty to her more uninteresting forms.



FIG. 18.



PALM.

The extreme elegance assumed by various climbing and trailing plants in their innumerable combinations is well worthy of being studied by the artist or designer. The Ivy that clings lovingly to the massive tower, or droops gracefully from the mouldering arch—the fruitful Vine twined carelessly round the rustic porch, or the rambling Roses and Clematis of our gardens, each and all furnish the facile pencil of the artist with the most beautiful outlines. Plant life supplies us with every variation of form, and the most subtle colouring is to be found among the fragrant flowers of our native woods and hedgerows—not forgetting the truly gorgeous tints of autumnal foliage when illuminated by the golden rays of the setting sun. Many of the tropical introductions to be found in our hot-houses and conservatories, graceful Palms (see Fig. 18) and Ferns for example, may be studied with advantage by the accomplished artist. The authorities at South Kensington recognised this fact some years ago, when they added the picturesque fernery to their educational appliances, thus enabling artists to study living plants within the Museum itself, as well as in the neighbouring gardens of the Royal Horticultural Society. I believe it is not generally known that permission to study the magnificent specimens of tropical and intertropical vegetation now existing in the Royal Botanic Gardens Kew, may be obtained on application by letter to the Director, Dr. J. D. Hooker, C.B., F.R.S.

Original drawings by Fitch and other artists, may be seen in the Museums of Economic Botany at Kew. The fine plates previously referred to as representing the structure of the exceedingly curious *Welwitschia mirabilis* together with actual specimens of the plant itself may be examined in Museum No. 3. Permission may, in most cases, be obtained to study plants in the public gardens and nurseries in or near the metropolis on application to the authorities; and the same remark applies to most of the provincial Botanic gardens throughout the country.

#### HINTS AND SUGGESTIONS.

Drawings of plants and fruits look best on fine grained paper.

Be very careful to keep your colours and hair pencils clean, or you will be disappointed in your attempts to obtain pure transparent tints.

If the paper refuses to take colour readily after having been sponged, it is probably greasy, in which case dissolve a bit of ox-gall the size of a pea in a tumbler of water, and carefully wash the drawing again with a clean sponge.

Let one tint dry before attempting to lay another over it, or much of the clean crisp effect of the colouring will be lost.

A good drawing looks well when held upside down—a proceeding that generally exposes the defects of a bad one.

In drawing on wood blocks for engraving use a hard 6 H pencil, and make every line clear and decided. All defects will be more decidedly shown by the proof than they are in the drawing.

In drawing on the lithographic stone, use a piece of smooth, stout paper on which to rest the hand, or a small card, as all finger marks and specks of saliva will show when an impression is taken, and give the plate a "smutty" appearance.

To transfer a drawing on to either block for engraving or lithographic stone, proceed as follows.

Trace a copy of the subject on ordinary tracing paper, and then rub the back with soft red chalk. Place this (chalk downwards) on the stone and go over every line with a style. On removing the prepared sketch it will be seen faintly outlined in red on the stone, and the student must now carefully go over it again either with a lithographic pen and prepared ink, or litho-chalk according to the subject and the effect required.

By this simple process a correct copy of the original is obtained in less time than would be occupied in drawing or copying the subject in the ordinary way. The subject must be reversed when transferred to the stone, or

the impression itself will be reversed when proofs are taken.

Beautiful outlines may be obtained by using a fine camel's hair or sable pencil, and either lithographic or Indian ink carefully prepared. To draw with these materials requires practice, but the very finest drawings may be executed in this manner and hardly any other instrument gives a more distinct line.

Wood-blocks for engraving require some slight preparation before they are fit or convenient to draw upon. Take a large flat tint brush and give the prepared surface a thin wash of Chinese white. This not only improves the colour, but forms an agreeable surface for the pencil of the artist, each stroke having a much better effect.

If the student requires to make drawings of any exact size as to scale, he will find the sectional tracing and drawing papers of Messrs. Letts, Son and Co. very useful. These papers are ruled in squares from one-tenth to one inch. They are extremely useful for enlarging or for reducing drawings in equal proportion. These papers are used in note-books and will be found very convenient for the artist or student.

In making sketches of thick, or fleshy-leaved, plants it is a good plan to show a leaf cut across so as to give the observer an idea of its thickness. This rule particularly applies to succulent plants such as Aloes, Agaves, Haworthias, Mesembryanthemums, and Sedums, though

it should always be done when the leaves are of greater substance than usual. (See Fig. 3.)

Lithographic chalk and prepared ink for drawing on stone may be bought of any lithographic stationer, or artist's colourman.

In rough sketches of large flowers the colour may be put in with coloured crayons far more expeditiously than with water colours, and the colours may be added in the studio. This may save time on an emergency, but it is always best, when practicable, to study the flower in water colours at the time if the drawing is to be in that vehicle.

Water colours should never be mixed with either spring or mineral waters, both being injurious to whites and delicate vegetable colours. If pure rain-water, which is the best that can be used, cannot be obtained, use distilled water, or at least, boil it before it is used.

Colours may be mixed with the white of an egg dissolved in soft water, and they will be more brilliant than when mixed with water only. A drawing coloured in this medium may at any stage of its progress be "set" firmly, by pouring boiling water over it. A drawing so treated will bear washing, and the finishing touches may be added without disturbing the earlier coats.

If the colours dry too quickly, a little gum tragacanth may be dissolved and used with them in the painting.

The dark parts of water colour drawings may be touched

with a weak solution of gum-arabic which will greatly assist in giving additional depth and richness of tone.

If it is requisite to leave small light spots or blotches on dark foliage, Bertolonias and Sonerilas for example, these spots may be painted in with fresh yolk of an egg. After this has set, the local colours of the leaves may be freely carried all over the surface, and when this is dry, the egg can be removed easily with clean white bread leaving the required blotches, which can then be tinted or shaded as required. Small white lights may also be put on in this manner.

It is impossible to lay down any precise rules with regard to the mixing and blending of colours, and much must be left to the student's natural or acquired taste, and feeling. It is, however, impossible for the tyro to make too many experiments with colours if he is careful to note the different effects resulting from the various combinations on his palette.

Carefully wrap "pure scarlet" in clean paper immediately after use, and on no account allow it to come in contact with any mineral substance, or its quality will rapidly deteriorate. As soon as this colour is laid on, the paper or canvas should be glazed with a wash or touch of gum-arabic, since it is one of the most delicate of all colours, and exposure to the atmosphere causes it to lose much of its brilliancy. Chinese White is the best and most permanent.

It is rather difficult to show the purity of white flowers on paper. They should be arranged if possible with the dark green foliage of the plant for a background. Many delicate white flowers look well shaded with pale blue, and occasionally the paper beneath or immediately round them may be tinted of a bluish grey colour so as to throw out the white colour better than when on a white ground.

A common portcrayon is invaluable for holding short pencils and may be obtained for a few pence.

Valuable hints on microscopic and other drawing, may be obtained by the student, who will take the trouble to refer to Dr. Lionel Beale's "How to work with the Microscope."

THE END.

LONDON:

Printed by A. Schulze, 13, Poland Street.



WINSOR & NEWTON'S

LIST OF

# COLOURS AND MATERIALS

FOR

WATER COLOUR PAINTING,

OIL COLOUR PAINTING,

PENCIL DRAWING, &c.

INCLUDING

WATER AND OIL COLOURS, BRUSHES, PENCILS,

DRAWING PAPERS AND STATIONERY, PREPARED CANVAS, STEEL WARE,

JAPANNED WARE, CABINET WARE, ARTISTS' CHINA WARE,

AND PUBLICATIONS ON THE FINE ARTS.



WINSOR & NEWTON,

Manufacturing Artists' Colourmen by Special Appointment to  
HER MAJESTY,

And Their Royal Highnesses the Prince and Princess of Wales.

38, RATHBONE PLACE, LONDON.



# WINSOR & NEWTON'S WATER COLOURS.

---

Previous to the establishment of the House of Winsor and Newton (in 1832), the evil repute of want of permanence attached to the *Water Colours* in ordinary use; and the most beautiful productions of Water Colour Art were inevitably fugitive through the instability of the materials employed. Complaints on this head were borne out by facts almost incredible to artists of the present day, whose predecessors used Spanish Liquorice, Dutch and Rose Pinks, Red Lead, Orpiment, Verditer, Green Bice, and even washes of tobacco-juice.

This deplorable state of so beautiful and purely English an art, urged Winsor and Newton to earnest inquiry and research, with a view of raising the character of the material employed.

The high standard of excellence sought by Winsor and Newton entirely set aside all common recipes and pernicious compounds, and rendered indispensable the aid of Chemical Science. Therefore perfectly appointed Chemical Works were established by them in 1844, with steam apparatus and all the appliances auxiliary to modern Chemical Art.

The advantageous results of the establishment of these Works were apparent in the production of colours totally different from those of all the other manufacturing colour houses. The old colours were improved and new ones introduced. Madders, Lakes, Carmines, Chinese White, Genuine Ultramarines, Chromes, Lemon Yellows, Cadmium Yellows, Aureolin, Viridian, &c., have attested by their superior qualities to the skill bestowed upon their production. The great advantages secured have been:—First, Increased power and brilliancy; and Secondly, The improvement in permanence of colours previously bearing but a faulty reputation in this respect, *and this may be said of nearly all the chemically made colours.*

Of WINSOR & NEWTON'S WATER COLOURS, therefore, it may be stated, that sound chemical knowledge and complete laboratory plant and apparatus,—powerful and specially adapted machinery,—and the matured experience of many years, ensure *purity of Pigment, exquisite fineness, and a most perfect form of preparation for the Artist's palette.*

WINSOR & NEWTON'S  
 FINELY PREPARED WATER COLOURS  
 IN DRY  
 CAKES AND HALF CAKES.



CAKE.



HALF CAKE.

CAKES, 1s. each.—HALF CAKES, 6d. each.

Antwerp Blue	Ivory Black
Bistre	King's Yellow
Blue Black	Lamp Black
British Ink	Light Red
Bronze	Naples Yellow
Brown Ochre	Neutral Tint
Brown Pink	New Blue
Burnt Sienna	Olive Green
Burnt Umber	Orange Chrome
Chinese White	Payne's Grey
Chrome Yellow	Prussian Blue
Cologne Earth	Prussian Green
Deep Chrome	Raw Sienna
Dragon's Blood	Raw Umber
Emerald Green	Roman Ochre
Flake White	Sap Green
Gamboge	Terre Verte
Hooker's Green, No. 1.	Vandyke Brown
Hooker's Green, No. 2.	Venetian Red
Indian Red	Vermilion
Indigo	Yellow Lake
Italian Pink	Yellow Ochre

CAKES, 1s. 6d. each.—HALF CAKES, 9d. each.

Black Lead	Purple Lake
Brown Madder	Roman Sepia
Constant White	Rubens' Madder
Crimson Lake	Scarlet Lake
Indian Yellow	Scarlet Vermilion
Mars Yellow	Sepia
Neutral Orange	Warm Sepia

CAKES, 2s. each.—HALF CAKES, 1s. each.

Cobalt Blue
Orange Vermilion
Violet Carmine

CAKES, 3s. each.—HALF CAKES, 1s. 6d. each.

Aureolin	Green Oxide Chromium
Burnt Carmine	Indian Purple
Cadmium Yellow, Pale	Intense Blue
Cadmium Yellow	Lemon Yellow
Cadmium Orange	Pink Madder
Carmine	Pure Scarlet
French Blue (or French Ultramarine)	Rose Madder (or Madder Lake)
Gallstone	Viridian

CAKES, 5s. each.—HALF CAKES, 2s. 6d. each.

Field's Orange Vermilion	Purple Madder
Madder Carmine	Smalt
Mars Orange	Ultramarine Ash

CAKES, 21s. each.—HALF CAKES, 10s. 6d. each.

QUARTER CAKES, 5s. 6d. each.

Genuine Ultramarine.

WINSOR & NEWTON'S  
FRENCH POLISHED MAHOGANY  
WHOLE CAKE  
BOXES OF WATER COLOURS.

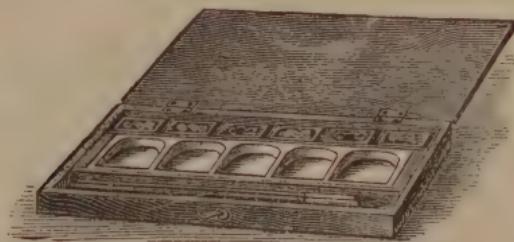
**"SLIDE"**



BOXES.

						£	s.	d.
6	Cake "Slide" Box, with brushes . . . . .					0	6	0
12	Ditto ditto ditto . . . . .					0	12	0
18	Ditto ditto ditto . . . . .					0	18	0
24	Ditto ditto ditto . . . . .					1	4	0

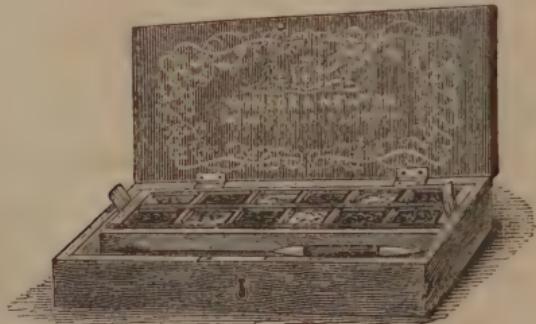
**"LID"**



BOX.

						£	s.	d.
6	Cake "Lid" Box, with brushes, &c. . . . .					0	10	6

**"LOCK"**



BOXES.

						£	s.	d.
12	Cake "Lock" Box, with fittings . . . . .					0	15	0
18	Ditto ditto ditto . . . . .					1	1	0

**"LOCK AND DRAWER"**

BOXES.



12 Cake "Lock and Drawer" Box, with fittings . . . . .

	£	s.	d.
12	0	18	0
18 Ditto	1	5	0

**"COMPLETE"**

BOXES.



12 Cake "Complete" Box, with fittings . . . . .

	£	s.	d.
12	1	1	0
18 Ditto	1	11	6
24 Ditto	2	2	0

---

### “CADDY LID” BOXES.



			£	s.	d.
12	Cake “Caddy Lid” Box, with full fittings	.	.	1	11 6
18	Ditto	ditto	.	2	2 0
24	Ditto	ditto	.	3	3 0

---

### “CABINET LID” BOXES.

			£	s.	d.
12	Cake “Cabinet Lid” Box, with varied fittings	.	.	2	12 6
18	Ditto	ditto	.	3	3 0
24	Ditto	ditto	.	4	14 6

---

### ARCHITECT'S AND SURVEYOR'S BOX.

			£	s.	d.
Containing 16 Cake Colours, Indian Ink, Brushes, and complete fittings	.	.	5	5	0

**“HANDSOME” BOXES.**

					£	s.	d.
12	Cake “Handsome” Box, with first class fittings				3	13	6
18	Ditto	ditto	ditto	.	4	14	6
24	Ditto	ditto	ditto	.	6	6	0
36	Ditto	ditto	ditto	.	9	9	0
12	Cake “Extra Handsome” Box, with choice fittings				4	14	6
18	Ditto	ditto	ditto	.	5	15	6
24	Ditto	ditto	ditto	.	8	8	0
36	Ditto	ditto	ditto	.	12	12	0
50	Ditto	ditto	ditto	.	21	0	0

WINSOR & NEWTON'S  
 FRENCH POLISHED MAHOGANY  
 HALF CAKE  
 BOXES OF WATER COLOURS.



"LID" BOX.

					s. d.
6	HALF CAKE	"SLIDE"	Box, with brushes.	.	4 0
12	Ditto	ditto	ditto	.	6 6
18	Ditto	ditto	ditto	.	9 6
24	Ditto	ditto	ditto	.	12 6
<hr/>					
6	HALF CAKE	"LID"	Box, with brushes	.	5 0
<hr/>					
12	HALF CAKE	"LOCK"	Box, with fittings	.	9 0
18	Ditto	ditto	ditto	.	12 0
<hr/>					
12	HALF CAKE	"LOCK AND DRAWER"	Box, with fittings	.	12 0
18	Ditto	ditto	ditto	.	15 0
<hr/>					
12	HALF CAKE	"COMPLETE"	Box, with fittings	.	14 0
18	Ditto	ditto	ditto	.	18 0
<hr/>					
12	HALF CAKE	"CADDY LID"	Box, with full fittings	.	20 0
18	Ditto	ditto	ditto	.	25 0

*N.B.—Whole Cake Water Colour Boxes, manufactured of Spanish Mahogany, Rosewood, Ebony, Walnut, and other choice Woods, in the first style of workmanship, and variously fitted with every requisite for Miniature, Figure, or Landscape Painting, Engineering, &c., from £30 to £100. Also Brass Bound Boxes for India, &c.*

WINSOR & NEWTON'S

# MOIST WATER COLOURS

IN PORCELAIN PANS.

---

WINSOR AND NEWTON'S *Moist Water Colours* are prepared after peculiar processes, and by a system of treatment known only to the Makers. Their characteristic qualities of easy solubility and prompt readiness for use are retained, unimpaired, for an unlimited period of time; so that a box of them, which may have been laid aside for two or three years, when required for use will be found *no less serviceable than when first purchased*. Climate also fails to affect these colours, which are found to be, and to remain, no less "Moist" in Tropical countries than in England; accordingly, they are confidently recommended to persons who are going to INDIA, and to all residents in the East. While having this valuable quality of solubility in their solid form, they possess another and all important one, *in drying perfectly firm on the paper* when in use. Their tints, too, are pure and luminous, and their washes clear and even.

In Sketching from Nature, and, when representing transient and evanescent effects, the superiority of the *Moist Colours* is at once felt and appreciated. Ever ready for instant application, they enable the desired tint to be produced *at once*—a result unattainable by the old tedious method of rubbing dry cakes, which not unfrequently permits the effect, and with it the *thought* of the artist to vanish, before the material can be obtained. It was this quality which, on their first introduction, secured for Winsor and Newton's *Moist Colours* the eminent popularity that they still enjoy with both professional and amateur artists.

The *Moist Colours* are placed in pans (in their size resembling the ordinary dry-cakes) of thin porcelain, and they are afterwards enclosed in tin-foil for greater security. When required for use, the foil is removed. A surface of colour is then presented to the artist, which is obtainable in any quantity, simply by the application of a wet brush.

WINSOR & NEWTON'S  
MOIST WATER COLOURS,

IN

WHOLE AND HALF CAKE PORCELAIN PANS.



WHOLE CAKE PAN.



HALF CAKE PAN.

WHOLE PANS, 1s. each.—HALF PANS, 6d. each.

Antwerp Blue  
Bistre  
Blue Black  
Brown Ochre  
Brown Pink  
Burnt Sienna  
Burnt Umber  
Chinese White  
Chrome Yellow  
Cologne Earth  
Deep Chrome  
Emerald Green  
Gamboge  
Hooker's Green, No. 1.  
Hooker's Green, No. 2.  
Indian Red  
Indigo  
Italian Pink  
Ivory Black  
Lamp Black

Light Red  
Naples Yellow  
Neutral Tint  
New Blue  
Olive Green  
Orange Chrome  
Payne's Grey  
Prussian Blue  
Prussian Green  
Raw Sienna  
Raw Umber  
Roman Ochre  
Sap Green  
Terre Verte  
Vandyke Brown  
Venetian Red  
Vermilion  
Yellow Lake  
Yellow Ochre

WHOLE PANS, 1s. 6d. each.—HALF PANS, 9d. each.

Brown Madder	Purple Lake
Crimson Lake	Roman Sepia
Indian Yellow	Rubens' Madder
Leitch's Blue (or Cyanine Blue)	Scarlet Lake
Mars Yellow	Scarlet Vermilion
Neutral Orange	Sepia
	Warm Sepia

WHOLE PANS, 2s. each.—HALF PANS, 1s. each.

Cobalt Blue
Orange Vermilion
Violet Carmine

WHOLE PANS, 3s. each.—HALF PANS, 1s. 6d. each.

Aureolin	Green Oxide Chromium
Burnt Carmine	Indian Purple
Cadmium Yellow, Pale	Intense Blue
Cadmium Yellow	Lemon Yellow
Cadmium Orange	Pink Madder
Carmine	Pure Scarlet
French Blue (or French Ultramarine)	Rose Madder (or Madder Lake)
Gallstone	Viridian

WHOLE PANS, 5s. each.—HALF PANS, 2s. 6d. each.

Mars Orange
Purple Madder
Smalt
Ultramarine Ash

---

WINSOR & NEWTON'S  
PATENT-FLEXIBLE-DIVISION  
JAPANNED TIN BOXES OF  
MOIST WATER COLOURS.

---

*(See illustration on opposite page.)*

---

It has long been felt as a considerable inconvenience, that in ordinary Boxes of Moist Colours the pans cannot be removed (without breakage or damage), in consequence of their having to be fastened to the bottom of the box to prevent their falling out. Virtually it is impossible for the purchaser to alter the arrangement of the colours, and generally nothing but the breakage of the empty pan, (and sometimes the division of the box as well,) will enable him to replace a spent colour.

WINSOR & NEWTON's *Patent-Flexible-Division Box* obviates these annoyances, and permits of colours being inserted and taken out, or re-arranged at pleasure.

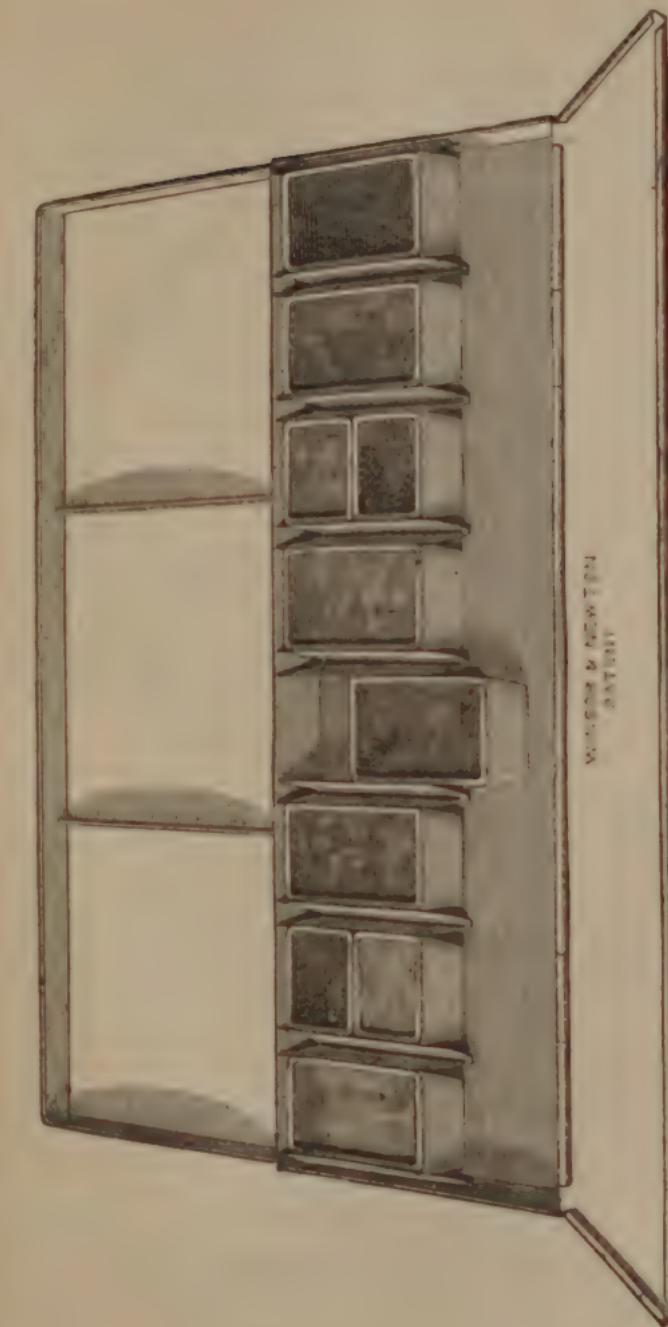
---

*N.B.—Winsor & Newton's Japanned Tin Boxes for Moist Water Colours are light and strong, with flaps of a dead white colour, serving as palettes. The Selections of Colours placed in them have been made with much care, and after due study of the various lists of the first Water Colour Artists.*

---

*N.B.—In all cases of Boxes of Moist Water Colours the prices quoted are for the Box and the Moist Colours contained therein only; no general fittings being included.*

---



PATENT-FLEXIBLE-DIVISION BOX OF MOIST WATER COLOURS.

(For Prices see pages 16 and 17.)

WINSOR & NEWTON'S  
**PATENT-FLEXIBLE-DIVISION**  
 JAPANNED TIN BOXES OF  
**MOIST WATER COLOURS.**

*(See illustration on previous page.)*

(Empty, 3s. 6d.)	<b>2 Cake Box.</b> Chinese White, and Sepia.	Fitted, 5s. 6d.
(Empty, 4s.)	<b>3 Cake Box.</b> Chinese White, New Blue, and Sepia.	Fitted, 6s. 6d.
(Empty, 4s. 6d.)	<b>4 Cake Box.</b> Raw Sienna, Light Red, Cobalt, and Vandyke Brown.	Fitted, 8s. 6d.
(Empty, 5s.)	<b>6 Cake Box.</b> Gamboge, Yellow Ochre, Crimson Lake, Light Red, Prussian Blue, and Vandyke Brown.	Fitted, 10s. 6d.
(Empty, 6s.)	<b>8 Cake Box.</b> Gamboge, Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Cobalt, Indigo, and Vandyke Brown.	Fitted, 14s.
(Empty, 6s. 9d.)	<b>10 Cake Box.</b> Gamboge, Aureolin ( $\frac{1}{2}$ ), Cadmium Yellow ( $\frac{1}{2}$ ), Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Cobalt, Indigo, Brown Pink, and Vandyke Brown.	Fitted, 18s.
(Empty, 7s. 6d.)	<b>12 Cake Box.</b> Gamboge, Aureolin ( $\frac{1}{2}$ ), Cadmium Yellow ( $\frac{1}{2}$ ), Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Cobalt, Indigo, Brown Pink, Vandyke Brown, and Neutral Tint.	Fitted, £1 1s.
(Empty, 8s. 3d.)	<b>14 Cake Box.</b> Gamboge, Aureolin ( $\frac{1}{2}$ ), Cadmium Yellow ( $\frac{1}{2}$ ), Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Brown Madder, Cobalt, Indigo, Brown Pink, Vandyke Brown, Neutral Tint, and Sepia.	Fitted, £1 5s.

(Empty, 9s.)

**16 Cake Box.** Fitted, £1 11s. 6d.

Gamboge, Aureolin ( $\frac{1}{2}$ ), Pale Cadmium Yellow ( $\frac{1}{2}$ ), Yellow Ochre, Cadmium Yellow ( $\frac{1}{2}$ ), Cadmium Orange ( $\frac{1}{2}$ ), Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Brown Madder, Cobalt, Indigo, Emerald Green ( $\frac{1}{2}$ ), Viridian ( $\frac{1}{2}$ ), Brown Pink, Vandyke Brown, and Neutral Tint.

(Empty, 10s. 6d.)

**18 Cake Box.** Fitted, £1 15s.

Gamboge, Aureolin ( $\frac{1}{2}$ ), Pale Cadmium Yellow ( $\frac{1}{2}$ ), Yellow Ochre, Cadmium Yellow ( $\frac{1}{2}$ ), Cadmium Orange ( $\frac{1}{2}$ ), Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Brown Madder, Purple Lake, Cobalt, Indigo, Emerald Green ( $\frac{1}{2}$ ), Viridian ( $\frac{1}{2}$ ), Brown Pink, Vandyke Brown, Neutral Tint, and Sepia.

(Empty, 12s.)

**20 Cake Box.** Fitted, £2 2s.

Gamboge, Aureolin, Raw Sienna ( $\frac{1}{2}$ ), Pale Cadmium Yellow ( $\frac{1}{2}$ ), Yellow Ochre, Cadmium Yellow ( $\frac{1}{2}$ ), Cadmium Orange ( $\frac{1}{2}$ ), Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Brown Madder, Purple Lake, Cobalt, French Blue, Indigo, Emerald Green ( $\frac{1}{2}$ ), Viridian ( $\frac{1}{2}$ ), Brown Pink, Vandyke Brown, Neutral Tint, and Sepia.

(Empty, 15s.)

**24 Cake Box.** Fitted, £2 12s. 6d.

Gamboge, Aureolin, Lemon Yellow ( $\frac{1}{2}$ ), Raw Sienna ( $\frac{1}{2}$ ), Yellow Ochre, Pale Cadmium Yellow ( $\frac{1}{2}$ ), Cadmium Orange ( $\frac{1}{2}$ ), Cadmium Yellow, Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Brown Madder, Purple Lake, Cobalt, French Blue, Prussian Blue, Indigo, Viridian ( $\frac{1}{2}$ ), Emerald Green ( $\frac{1}{2}$ ), Terre Verte ( $\frac{1}{2}$ ), Oxide of Chromium ( $\frac{1}{2}$ ), Olive Green, Brown Pink, Vandyke Brown, Neutral Tint, and Sepia.

(Empty, 18s.)

**30 Cake Box.** Fitted, £4 4s.

Gamboge, Pale Cadmium Yellow ( $\frac{1}{2}$ ), Lemon Yellow ( $\frac{1}{2}$ ), Aureolin, Raw Sienna, Yellow Ochre, Cadmium Yellow, Cadmium Orange, Mars Orange, Burnt Sienna, Rose Madder, Carmine, Crimson Lake, Light Red, Orange Vermilion, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Brown Madder, Purple Madder, Burnt Carmine, Violet Carmine, Smalt ( $\frac{1}{2}$ ), Intense Blue ( $\frac{1}{2}$ ), Emerald Green ( $\frac{1}{2}$ ), Viridian ( $\frac{1}{2}$ ), Ultramarine Ash, Cobalt, French Blue, Prussian Blue, Oxide of Chromium ( $\frac{1}{2}$ ), Terre Verte ( $\frac{1}{2}$ ), Brown Pink, Vandyke Brown, Neutral Tint, and Sepia.

WINSOR AND NEWTON'S  
JAPANNED TIN BOXES OF  
MOIST WATER COLOURS.



JAPANNED TIN BOX OF MOIST WATER COLOURS.

The Lists of Colours are the same as placed in the Patent-Flexible-Division Boxes of Moist Water Colours, (Pages 16, and 17).

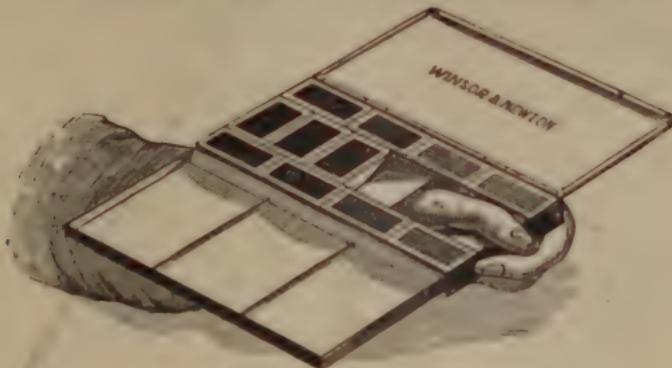
WHOLE CAKE.

Empty.		Fitted with Colours.			Empty.		Fitted with Colours.		
s.	d.	£	s.	d.	s.	d.	£	s.	d.
3	0	2	Cake	.	0	5	6	6	9
3	3	3	"	.	0	6	6	7	6
3	6	4	"	.	0	8	6	8	3
4	0	6	"	.	0	10	6	9	0
4	6	8	"	.	0	14	0	9	9
5	3	10	"	.	0	18	0	10	6
6	0	12	"	.	1	1	0	12	6

HALF CAKE.

Empty.		Fitted with Colours.			Empty.		Fitted with Colours.		
s.	d.	£	s.	d.	s.	d.	£	s.	d.
3	3	3	Half Cake	.	0	5	0	6	0
4	0	6	"	.	0	7	6	6	6
4	6	8	"	.	0	9	0	7	0
5	0	10	"	.	0	10	6	7	6
5	6	12	"	.	0	12	6	8	6

## WINSOR &amp; NEWTON'S THUMB-HOLE BOXES.



THUMB-HOLE BOX.

Empty.			Fitted with Colours.				
	s.	d.	£	s.	d.		
9 0	11	Cake Moist Water Colour Thumb-hole Box	.	1	5	0	
10 6	17	" ditto	:	:	:	1	15
12 0	21	" ditto	:	:	:	2	5

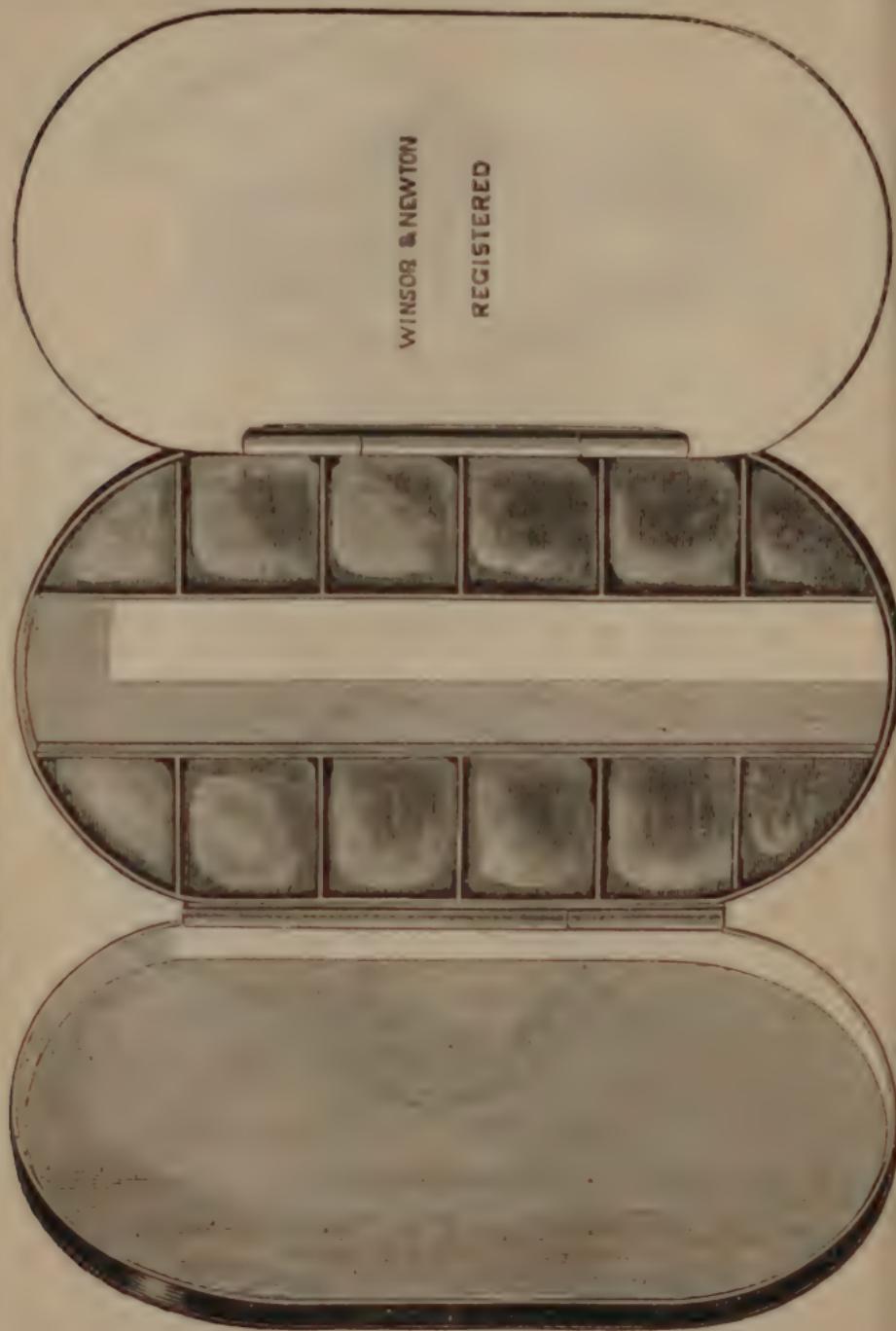
## WINSOR &amp; NEWTON'S PALETTE-BOXES.



PALETTE BOX.

Empty.			Fitted with Colours.				
	s.	d.	£	s.	d.		
5 0	6	Half Cake Moist Water Colour Palette Box with Patent Flexible Divisions	.	0	8	6	
5 6	8	Ditto	ditto	ditto	.	0	10
6 0	10	Ditto	ditto	ditto	.	0	12
6 6	12	Ditto	ditto	ditto	.	0	15

## THE OVAL-POCKET-BOX.



THE OVAL-POCKET-BOX  
(Size of the box.)

WINSOR & NEWTON'S  
REGISTERED  
JAPANNED TIN BOXES OF  
MOIST WATER COLOURS.

THE OVAL-POCKET-BOX.

REGISTERED NO. 257,752.

(As illustrated on opposite page.)

Very convenient for the pocket, both in shape and size. Contains twelve Colours, and has a division for brushes.

*Fitted with twelve Colours, Price 15s.*

THE LOCKET BOX.

REGISTERED NO. 257,753.



THE LOCKET BOX.  
(Size of the box.)

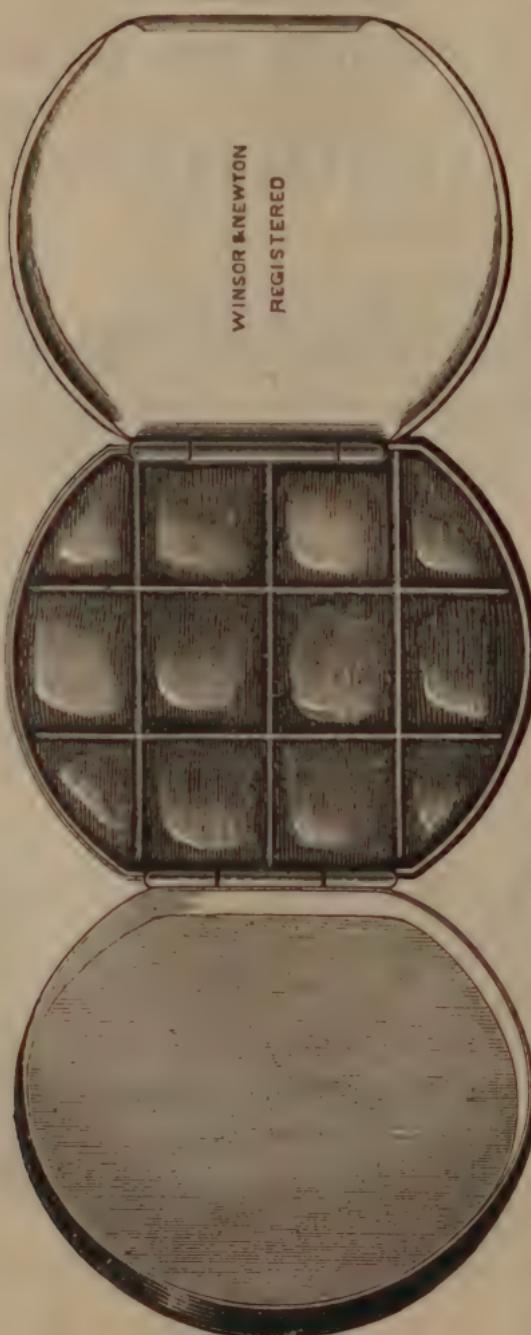
A neat, light, bijou Box, that can be carried on a watch-guard or chain, and containing six Colours.

*Fitted with six Colours, Price 6s. 6d.*

WINSOR & NEWTON'S  
REGISTERED JAPANNED TIN BOXES OF  
MOIST WATER COLOURS.

CONTINUED.

REGISTERED NO. 215,673.



THE PORTE-COULEUR.  
(Size of the box.)

Small and compact for the waistcoat-pocket. Contains twelve Colours.

*Fitted with twelve Colours, Price 10s. 6d.*

# WINSOR & NEWTON'S MOIST WATER COLOURS

## IN COLLAPSIBLE TUBES.



Moist Tube Colours, though somewhat wasteful and troublesome in use, are of assistance as furnishing quickly a quantity of colour, and affording facilities for power of touch and vigour of effect. They should, however, be used within reasonable time, as they do not keep so long or so well as the ordinary solid or "Pan" form of Moist Colour.

### 1s. each.

Antwerp Blue	Deep Chrome	Naples Yellow	Raw Umber
Bistre	Emerald Green	Neutral Tint	Roman Ochre
Blue Black	Gamboge	New Blue	Terre Verte
Brown Ochre	Indian Red	Olive Green	Vandyke Brown
Brown Pink	Indigo	Orange Chrome	Venetian Red
Burnt Sienna	Italian Pink	Payne's Grey	Vermilion
Burnt Umber	Ivory Black	Prussian Blue	Yellow Lake
Chinese White	Lamp Black	Prussian Green	Yellow Ochre
Chrome Yellow	Light Red	Raw Sienna	

### 1s. 6d. each.

Brown Madder	Leitch's Blue (or Cynnone Blue)	Purple Lake	Scarlet Vermilion
Crimson Lake	Mars Yellow	Roman Sepia	Sepia
Indian Yellow	Neutral Orange	Scarlet Lake	Warm Sepia

### 2s. each.

Cobalt Blue	Orange Vermilion	Violet Carmine
-------------	------------------	----------------

### 3s. each.

Aureolin	Cadmium Orange	Gallstone	Base Madder (or Madder Lake)
Burnt Carmine	Carmine	Green Oxide Chrom.	
Cadmium Yellow, Pale	French Blue (or	Indian Purple	
Cadmium Yellow	French Ultramarine)	Pink Madder	Viridian

### 5s. each.

Mars Orange	Purple Madder	Ultramarine Ash	Smalt
-------------	---------------	-----------------	-------

## JAPANNED TIN BOXES OF MOIST TUBE WATER COLOURS,

Containing 12 Moist Tubes £1 1s.; 15 ditto, £1 11s. 6d.; 20 ditto, £2 2s.;  
24 ditto, £2 12s. 6d.; 30 ditto, £3 13s. 6d.

WINSOR & NEWTON'S  
**GLASS-COVERED MOIST WATER COLOURS**  
 FOR  
**Illumination and Missal Painting,**  
 Decorative and Ornamental Work, &c.

*(See illustration on opposite page.)*

The complete separation effected by the Colours being contained in separate Gallipots, the protection afforded by the glass lids, and the convenience of seeing tints through them, cause this form of colour to be most useful in all cases where it is of importance to avoid dust, dirt, and accidental admixture of tints. WINSOR and NEWTON's Glass-Covered Moist Colours, being preserved clean and unsullied while in use, have been adopted generally for Illumination, and all kindred arts.

*Colours and Prices same as those of Moist Water Colours in Pans.  
 Pages 12 and 13.*

WINSOR & NEWTON'S  
**FITTED BOXES**  
**OF GLASS-COVERED COLOURS AND MATERIALS**  
 FOR  
**Illumination and Missal Painting,**  
 DECORATIVE AND ORNAMENTAL WORK, &c.

**Half Guinea Box.**—Containing seven Half Colours in Pans, and fittings.

**Guinea Box.**—Containing eight Glass-covered Colours, and Materials.

**Guinea and a Half Box.**—Containing twelve ditto ditto.

**Two Guinea Box.**—Containing sixteen ditto ditto.

**Three Guinea Box.**—Containing twenty-one ditto ditto.

**Five Guinea Box.**—Containing twenty-four ditto and complete Materials.



GLASS-COVERED MOIST WATER COLOUR.

(See opposite page.)

WINSOR & NEWTON'S  
JAPANNED TIN BOX OF COLOURS AND MATERIALS FOR  
PAINTING ON GLASS.

Price £2 2s.

WINSOR & NEWTON'S FRENCH POLISHED MAHOGANY  
CADDY LID BOX OF COLOURS AND MATERIALS FOR  
Heraldic Blazoning.

Price £3 3s.

## INDIAN INK.



"SUPER SUPER" INDIAN INK.—(Size of Stick.)

Good, small size 80 to the lb.	Per stick.		Best, larger, 40 to the lb.	Per stick.	
	s.	d.		s.	d.
Best, small size, " "	1	0	Best, larger, 32 "	2	6
Very Choice "Super, Super" . . . . .			per stick	7	6

WINSOR & NEWTON'S  
PERMANENT CHINESE WHITE.



BOTTLE OF CHINESE WHITE.  
(Size of the bottle.)

WINSOR AND NEWTON'S Oxide of Zinc, sold under the name of  
CHINESE WHITE.

*A peculiar preparation of White Oxide of Zinc, the only eligible  
White Pigment for Water Colour Painters.*

~~~~~  
PRICE 1s. PER BOTTLE.  
~~~~~

It is now upwards of *thirty-seven years* since WINSOR AND NEWTON turned their attention to remedying a want that was much felt by the Water Colour Painters of that day, viz.: of a White that should combine perfect permanency with good body in working. The invention and introduction of the pigment named by them "Chinese White" was the result, and its superior body and freedom of working immediately attracted the notice of the leading Water Colour Painters.

The late Mr. J. D. Harding being particularly desirous of ascertaining its permanency, and by submitting it to the examination of one of the greatest Chemists in Europe (the late M. Faraday), having satisfied himself that it might be employed with perfect safety, strongly recommended it in preference to all other white pigments. In his "*Principles and Practice of Art*," he wrote:—

"When this pigment, which is prepared by Winsor and Newton under the name of 'Chinese White' was first put into my hands, some years ago, I applied to one of my friends, whose name as a chemist and philosopher is amongst the most distinguished in our country, to analyze it for me, and to tell me if I might rely on its durability; the reply was, that if it would in all other respects answer the purpose I required of it, I had nothing to fear on account of its durability."

Ever since that time (1834) WINSOR AND NEWTON's Chinese White has been in use by all the Eminent Water Colour Artists, and it is a source of great satisfaction to WINSOR AND NEWTON that they are able to say, *that in no instance has any work of art, in which their White has been used, suffered from its employment*, while prior to its introduction the complaints of Whites changing were of every day occurrence.

WINSOR & NEWTON'S  
WATER COLOUR LIQUIDS, MEDIUMS, &c.



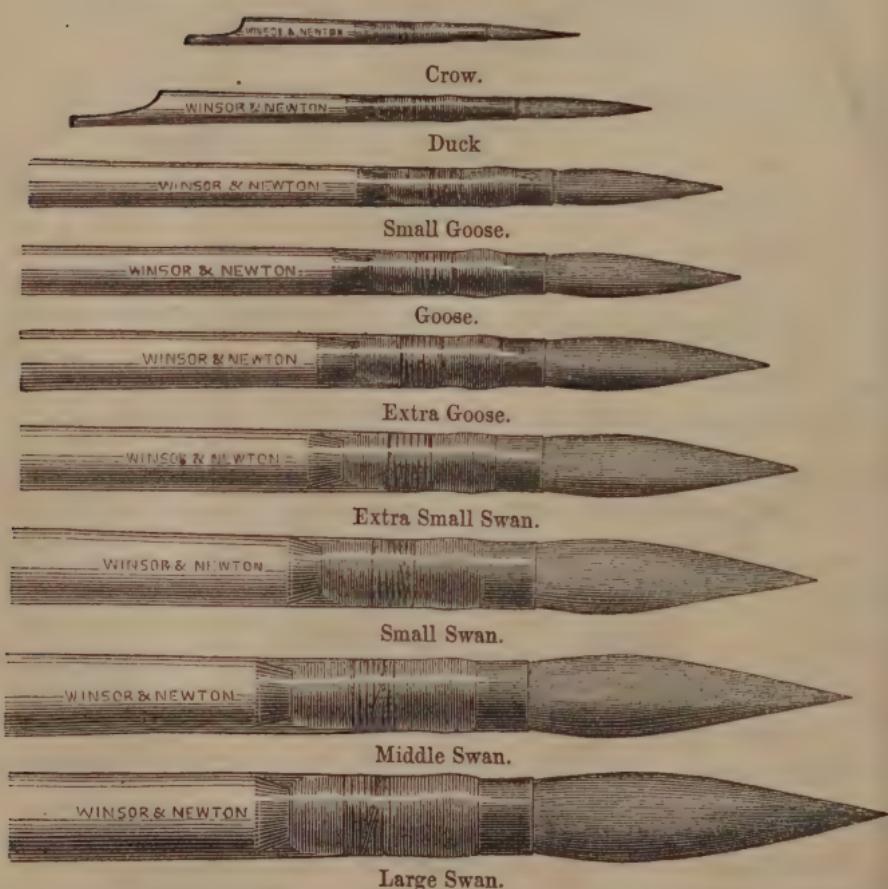
BOTTLE OF LIQUID COLOUR.

(Size of the bottle.)

			s.	d.
Liquid Indelible Brown Ink, for Outlines or for Sketching		per bottle	1	6
Liquid Prout's Brown		"	1	6
Liquid Sepia		"	1	6
Liquid Asphaltum. (In bottles similar to illustration on opposite page)		"	1	6
Liquid Carmine		"	1	6
Liquid Indian Ink, for Architects, Surveyors, &c.		"	1	0
Colourless Liquid Ox Gall		"	1	0
Artist's prepared Gum Water; pure, clear, and strong	small bottles	"	0	6
Ditto	ditto	middle bottles	0	9
Ditto	ditto	large bottles	1	0
Water Colour Megilp		"	1	6
Illuminating Body, for Illumination, Missal Painting, &c.		"	1	6
Raising Preparation, for Illumination, Missal Painting, &c.		"	1	6
Water Mat Gold Size	per gallipot	"	1	6
Prepared Ox Gall	"	"	0	6

WINSOR & NEWTON'S  
FINEST  
BROWN OR RED SABLE BRUSHES  
IN QUILLS  
FOR  
WATER COLOUR PAINTING.

---



WATER COLOUR SABLES IN QUILLS.  
(*Sizes of the Brushes.*)

## WINSOR &amp; NEWTON'S

## FINEST BROWN OR RED SABLES IN QUILLS.

(See illustrations on opposite page.)

		s.	d.		s.	d.
Crow . . . . .	each	0	6	Extra Small Swan . . . . .	each	4 6
Duck . . . . .	"	0	8	Small . . . . .	"	6 6
Goose . . . . .	"	1	0	Middle . . . . .	"	8 6
Extra Goose . . . . .	"	1	6	Large . . . . .	"	10 6

## FINE SIBERIAN HAIR BRUSHES IN QUILLS.

		s.	d.		s.	d.
Crow . . . . .	each	0	2	Extra Small Swan . . . . .	each	1 6
Duck . . . . .	"	0	4	Small . . . . .	"	2 6
Goose . . . . .	"	0	6	Middle . . . . .	"	3 6
				Large . . . . .	"	5 0

## CAMEL HAIR BRUSHES IN QUILLS.

		s.	d.		s.	d.
Crow . . . . .	each	0	1	Extra Small Swan . . . . .	each	0 9
Duck . . . . .	"	0	1	Small . . . . .	"	1 0
Goose . . . . .	"	0	2	Middle . . . . .	"	1 6
				Large . . . . .	"	2 0

WINSOR & NEWTON'S  
FINEST BROWN OR RED WATER COLOUR  
SABLES IN ALBATA.—FLAT.

---



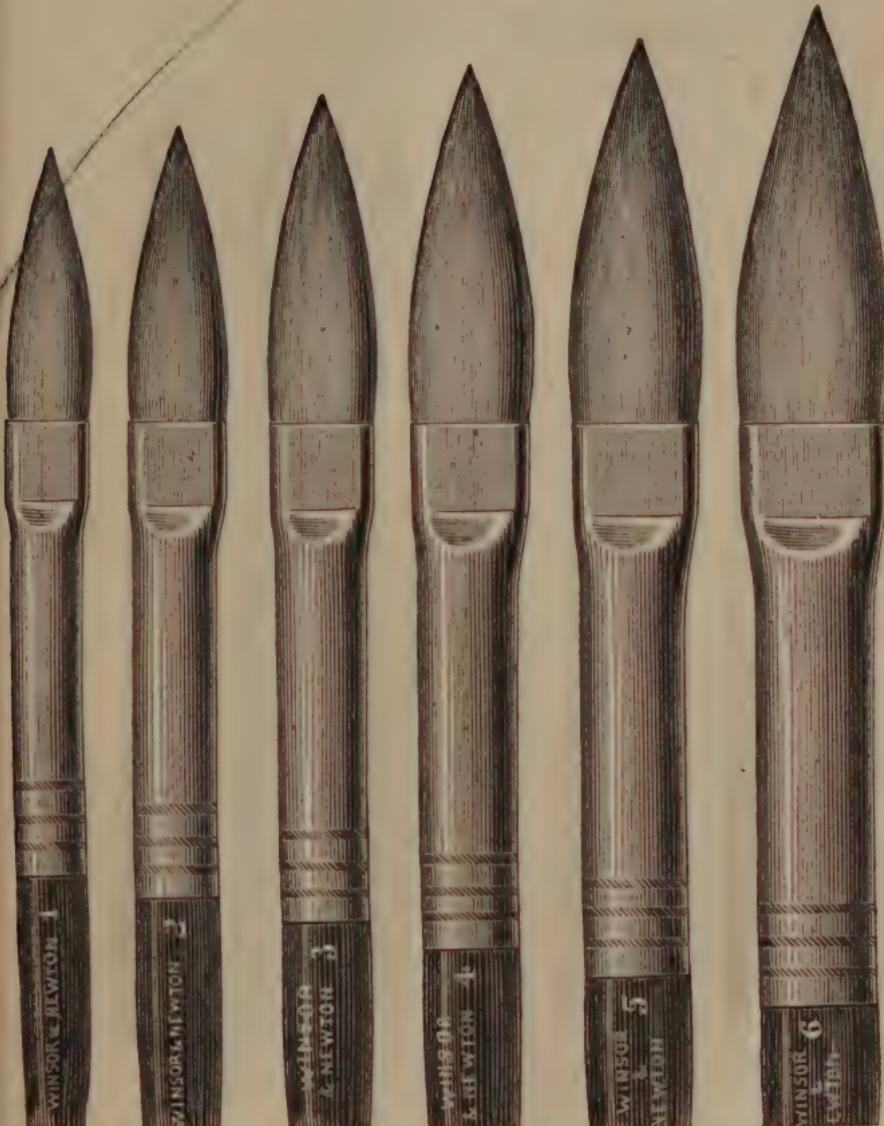
FLAT WATER COLOUR SABLES IN ALBATA.—(Sizes of the Brushes.)

---

No. 1	.	.	.	.	each	s. d.	No. 5	.	.	.	each	s. d.
" 2	.	.	.	"	1 3		" 6	.	.	.	"	3 0
" 3	.	.	.	"	1 6		" 7	.	.	.	"	4 0
" 4	.	.	.	"	2 0							

N.B.—These Brushes have *Ebony* Handles, and are marked with *three* *nerls* on their *Albata* Ferrules.

## DITTO.—EXTRA LARGE SERIES.

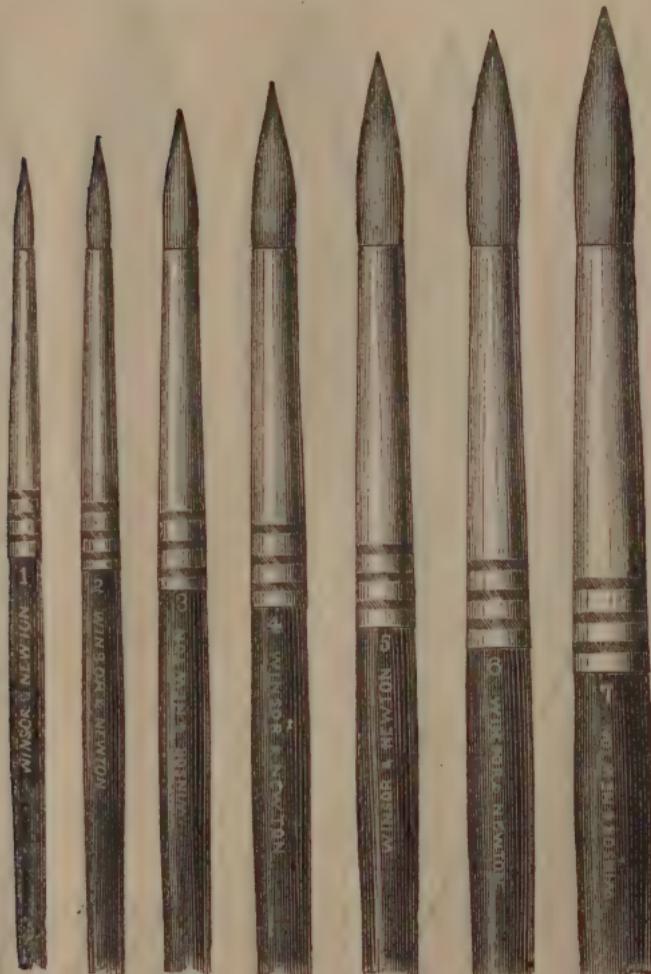


FLAT SABLES IN ALBATA.—EXTRA LARGE SERIES.—(Sizes of the Brushes.)

No. 1	.	.	.	each	s. d.	No. 4	.	.	.	each	s. d.
“ 2	.	.	.	”	9 0	“ 5	.	.	.	”	18 0
“ 3	.	.	.	”	12 0	“ 6	.	.	.	”	21 0

*Note.*—Nos. 4, 5 and 6 made in *Brown* Sable only.

WINSOR & NEWTON'S  
FINEST BROWN OR RED WATER COLOUR  
SABLES IN ALBATA.—ROUND.



ROUND WATER COLOUR SABLES IN ALBATA.—(Sizes of the Brushes.)

No. 1 . . . . .	each	s. 1	d. 0	No. 5 . . . . .	each	s. 2	d. 6
“ 2 . . . . .	“	1	3	“ 6 . . . . .	“	3	0
“ 3 . . . . .	“	1	6	“ 7 . . . . .	“	4	0
“ 4 . . . . .	“	2	0				

N.B.—These Brushes have *Ebony* Handles, and are marked with *three* *nerls* on their *Albata* Ferrules.

## DITTO—EXTRA LARGE SERIES.

ROUND SABLES IN ALBATA.—EXTRA LARGE SERIES.—(*Sizes of the Brushes.*)

No. 1	each	s.	d.	No. 3	each	s.	d.	No. 5	each	s.	d.
„ 2	„	9	0	„ 4	„	15	0	„ 6	„	21	0

*Note.*—Nos. 4, 5 and 6 made in *Brown* Sable only.

## WINSOR &amp; NEWTON'S POCKET SABLES IN ALBATA.



POCKET SABLES IN ALBATA. (Sizes of the Pocket Brushes.)

		s.	d.
Small Pocket Sable in Albata	•	7	6
Large Pocket Sable in Albata	•	10	6
Silver Brush Case and Pencil combined	•	15	0
M. Leads for replenishing ditto	•	0	6

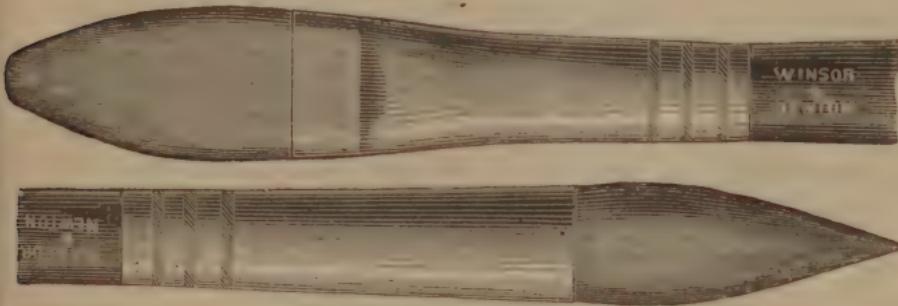
These Brushes are made to accompany any of the Registered Boxes of *Moist Colours* (pages 21 and 22); thus supplying a light and instantly available means of sketching, tinting, or making colour notes.

## BROAD RED SABLE BRUSHES IN ALBATA.

BROAD RED SABLE IN ALBATA. (*Size of the 1 inch Brush.*)

$\frac{1}{2}$ ,  $\frac{3}{4}$ , 1,  $1\frac{1}{2}$ , 2, and  $2\frac{1}{2}$  inches wide. Price 5s. per inch.

## SKY OR WASH BRUSHES.

WASH DYED SABLES IN ALBATA. (*Sizes of the Brushes.*)

		s.	d.
Siberians in Tin, Flat	· · · · ·	each	1 6
Ditto in Quill, Round	· · · · ·	"	2 6
Wash Dyed Sables in Tin, Flat or Round	· · · · ·	"	3 6
Ditto in Albata, Flat or Round	· · · · ·	"	5 0

## FLAT CAMEL HAIR BRUSHES IN TIN.

## POLISHED CEDAR HANDLES.

From  $\frac{1}{2}$  inch to 4 inches wide. Price 10d. per inch.

## ARTISTS' DRAWING PAPERS.

Messrs. WINSOR & NEWTON pay particular attention to this department of their business, and keep constantly on hand a very large and varied stock of first class Drawing Papers, comprising every description needed for the Fine Arts.

### EXPLANATION OF SURFACES.

**N.**—"Not"—or ordinary surface; having a slight grain.

**H.P.**—"Hotpressed"—or perfectly smooth surface.

**R.**—"Rough"—or very coarse surface; of large and open grain.

### ORDINARY DRAWING PAPERS (WHATMAN'S).

	SURFACES.	SIZE.	Per Sheet.
			s. d.
Demy	N. and HP.	about 20 inches by 15½	0 2
Medium	N. and HP.	22 , , 17½	0 3
Royal	N. and HP.	24 , , 19½	0 4
Imperial	N. HP. and R.	30½ , , 22½	0 6
Double Elephant	N. HP. and R.	40 , , 27	0 9
Antiquarian	N. . . . ,	52½ , , 30½	4 0

### ARTISTS' SEAMLESS DRAWING PAPERS (WHATMAN'S).

	SURFACES.	WEIGHT	Per Sheet.
			s. d.
Thick Imperial	N. HP. and R.	90 lbs. to the ream	0 9
Extra Thick Imperial	N. HP. and R.	140	1 3
Ex. Thick Dble. Elephant	N. . . . ,	235	2 6

### GRIFFIN ANTIQUARIAN.

A PURE, CHOICE, AND FIRST CLASS HAND MADE DRAWING PAPER  
MANUFACTURED BY WHATMAN FOR WINSOR & NEWTON.

Per sheet of about 53 inches by 31 ins., N. or R. . . . 7s. 6d.

**N.B.**—The initials of the Firm (W. & N.) are in the Water mark: and at the corner of every sheet is stamped their trade mark (Griffin).

## OLD AND CHOICE DRAWING PAPERS.

Messrs. WINSOR & NEWTON have succeeded in getting together a choice stock of Whatman's Drawing Papers of mature age.

PRICES, DOUBLE THOSE ON OPPOSITE PAGE.

(*The Stock consists principally of extra thick Imperial and Double Elephant Papers.*)

## Imitation Creswick's Drawing Papers.

Stout Imperial 1s. per sheet. Stout Double Elephant 2s. per sheet.

## J. D. Harding's Drawing Papers.

Imperial 6d. per sheet. Extra Thick Imperial 1s. per sheet.

## Tinted Crayon Papers. (Machine made). A great variety of Tints.

Royal 3d. per sheet. Imperial 5d. per sheet. Double Elephant 8d. per sheet. (*Pattern Books on application.*)

## Handmade Tinted Papers.—Stout Imperial 7d. per sheet.

## Vellum Paper. (A highly finished and toned Paper, resembling Vellum.) Extra Thick Royal 1s. per sheet.

## Hollingworth or White Pencil Paper.—Demy 1d. Medium 2d. Royal 3d. Imperial 4d. Double Elephant 6d. per sheet.

## Cartridge Papers.—Medium 1d. Royal 1½d. Thin Log 2d. Thick Log 2½d. Thin Engineers' 3d. Thick Engineers' 4d. per sheet.

## Cartoon, or Continuous Drawing Cartridge Paper, 4 ft. 6 in. wide. Thick White 1s. per yard. Thin White 6d. per yard.

## Outsides, Drawing Papers, various.

14 lb. Parcels of variously assorted kinds and surfaces, each 12s.

(*These Outsides have to be taken as assorted in the parcels, and cannot be specially selected.*)

## Tracing Papers. Tracing Cloth. Transfer Papers.

## TURNBULL'S LONDON DRAWING BOARDS.

	15 inches by 12	each	2 sheet.	3 sheet.	4 sheet.	6 sheet.
			s. d.	s. d.	s. d.	s. d.
Foolscap	15 inches by 12	each	0 4	0 6	0 9	1 0
Demy	18	14	0 6	0 9	1 0	1 6
Medium	20 $\frac{1}{2}$	15 $\frac{1}{2}$	0 9	1 2	1 6	2 3
Royal	22	17 $\frac{1}{2}$	1 0	1 6	2 0	3 0

## TURNBULL'S MOUNTING BOARDS.

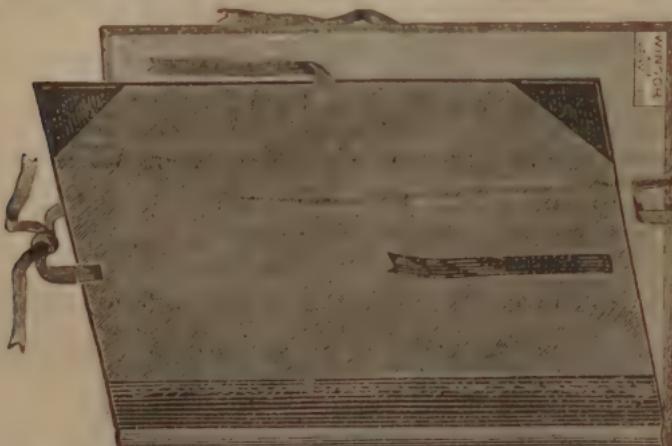
	18 inches by 14	each	3 sheet.	4 sheet.	6 sheet.
			s. d.	s. d.	s. d.
Demy	18 inches by 14	each	0 5	0 6	0 8
Half Imperial	20 $\frac{1}{2}$	14	0 6	0 8	0 10
Royal	22	17 $\frac{1}{2}$	0 7	0 9	1 0
Imperial	28	20 $\frac{1}{4}$	1 0	1 3	1 9

## SUPERFINE MOUNTING BOARDS.

	21 $\frac{1}{2}$ inches by 14 $\frac{1}{2}$	each	3 sheet.	4 sheet.	6 sheet.
			s. d.	s. d.	s. d.
Half Imperial	21 $\frac{1}{2}$ inches by 14 $\frac{1}{2}$	each	0 3	0 4	0 6
Royal	23	18 $\frac{1}{4}$	0 4	0 6	0 8
Imperial	28 $\frac{1}{2}$	21 $\frac{1}{4}$	0 6	0 8	1 0
Double Elephant	38 $\frac{1}{2}$	26	—	2 0	3 0

## SUPERIOR PORTFOLIOS.

CLOTH SIDES, ROAN BACKS AND CORNERS, AND SILK STRINGS.



All sizes; from 4to. Imperial to Double Elephant.

## EXTRA THICK SOLID BLOCKS.

WITH OR WITHOUT COVERS.



EXTRA THICK SOLID BLOCK WITH HALF BOUND COVER.

MADE OF **WHATMAN'S EXTRA THICK** PAPERS.

Each containing 32 Surfaces.

				Solid Blocks with Half Bound Covers		Solid Blocks without Covers.	
				s.	d.	s.	d.
16mo.	Imperial . . .	7 inches by 5	each	4	6	3	0
"	Double Elephant	9	" 6	6	0	4	6
8vo.	Imperial . . .	10	" 7	7	0	5	6
6mo.	Imperial . . .	14	" 6	10	6	7	6
8vo.	Double Elephant	12	" 9	12	0	9	0
4to.	Imperial . . .	14	" 10	14	0	10	6
3mo.	Imperial . . .	18	" 10	21	0	15	0
4to.	Double Elephant	18	" 12	24	0	18	0
Half	Imperial . . .	20	" 14	28	0	21	0

## GRIFFIN ANTIQUARIAN SOLID BLOCKS

WITH OR WITHOUT COVERS.

MADE OF WINSOR & NEWTON'S **GRIFFIN ANTIQUARIAN.***A pure, choice, and first class Drawing Paper of Whatman's Manufacture.*

Each containing 16 Surfaces.

		5 inches by $3\frac{1}{2}$ each	Solid Blocks with Half Bound Covers.		Solid Blocks without Covers.	
			s.	d.	s.	d.
32mo.	Imperial . . .	5 inches by $3\frac{1}{2}$ each	3	6	2	6
24mo.	Imperial . . .	7 " $3\frac{1}{2}$ "	4	6	3	6
16mo.	Imperial . . .	7 " 5 "	5	6	4	6
8vo.	Imperial . . .	10 " 7 "	9	0	7	6
16mo.	Antiquarian . .	12 " $7\frac{1}{2}$ "	12	0	10	6
8vo.	Double Elephant 12	9 "	15	0	12	6
4to.	Imperial . . .	14 " 10 "	18	0	15	0
8vo.	Antiquarian . .	15 " 12 "	24	0	21	0
4to.	Double Elephant 18	12 "	30	0	25	0
Half	Imperial . . .	20 " 14 "	36	0	30	0

## BLOCKED SKETCH BOOKS.

These Sketch Books are made like Solid Blocks, but with one edge stitched and bound, and three edges pasted only. When these latter are released by being cut round in the usual manner, the Book becomes a "Sketch Book" instead of a "Block."

MADE OF **WHATMAN'S THICK** PAPERS.

							s.	d.
16mo.	Royal . . .	$5\frac{1}{2}$ inches by $4\frac{1}{2}$ . . . . .	each				3	0
"	Imperial . . .	7 " 5 . . . . .	"				3	6
8vo.	Royal . . .	9 " $5\frac{1}{2}$ . . . . .	"				4	6
"	Imperial . . .	10 " 7 . . . . .	"				5	6

*Blocked Sketch Books made of Machine TINTED PAPERS are about one-fourth less in price than the above.*

## HALF BOUND SKETCH BOOKS.

LEATHER BACKS AND ELASTIC BANDS.



HALF BOUND SKETCH BOOK.

		Made of Whatman's Papers.	Made of Machine Tinted Crayon Papers.
		s. d.	s. d.
32mo.	Imperial . . .	5 inches by $3\frac{1}{2}$ each	1 6
24mo.	Imperial . . .	7 " $3\frac{1}{4}$ "	2 0
16mo.	Imperial . . .	7 " 5 "	2 6
8vo.	Royal . . .	9 " $5\frac{1}{2}$ "	3 0
12mo.	Imperial . . .	10 " $4\frac{1}{2}$ "	4 0
8vo.	Imperial . . .	10 " 7 "	4 6
4to.	Royal . . .	11 $\frac{1}{2}$ " 9 "	6 0
4to.	Imperial . . .	14 $\frac{1}{2}$ " 10 "	8 0

## SKETCHING FOLIOS,

WITH JAPANNED TIN FRAMES.

*Half Bound, with Leather Flap, and Pocket for containing  
Loose Sketches or Reserve of Paper.*

		s. d.		s. d.
8vo.	Imperial . . .	each 5 0	4to.	Imperial . . . each 7 6
4to.	Royal . . .	" 6 0	4to.	Double Elephant " 12 0
6mo.	Imperial . . .	" 6 6	Half Imperial . . .	" 15 0



## WINSOR &amp; NEWTON'S

GRIFFIN

## EXTRA CUMBERLAND LEAD

## ARTISTS' DRAWING PENCILS.

These Drawing Pencils are manufactured of the finest Cumberland Lead, warranted perfectly free from grit. As they contain double the quantity of Lead usually placed in Pencils of this description, they give forth a good volume of colour, and when in use they work smoothly and evenly, and may be handled with perfect freedom.

HHHH.	Extremely hard (for Engineering or Drawing on Wood)	Each
HHH.	Very hard (for Architectural Drawing)	
HH.	Hard (for fine Outline Drawing)	
H.	Moderately hard (for light sketching)	6d.
FF.	Very firm (for light shading)	
F.	Firm (for fine Drawing)	
HB.	Hard and Black (for free sketching)	
B.	Black (for ordinary shading)	
BB.	Soft Black (for deep shading)	
EHB.	Extra Hard and Black (for very bold sketching)	
BBB.	Very Black (for extra deep shading)	9d.
BBBB.	Extra Soft and Black (for full, rich, deep shading)	1s.

## ORDINARY CUMBERLAND LEAD

## DRAWING PENCILS.

4 H to BB as above . . . . .	each	4d.
EHB and BBB . . . . .	"	6d.
BBBB. . . . .	"	8d.



WINSOR & NEWTON'S  
IMPROVED POLISHED  
DRAWING PENCILS.

These improved Drawing Pencils are strongly recommended for their richness of colour, variety of tint, evenness of texture, and strength of Lead. They combine freedom of handling with firmness of *materiel* (they can be cut to the finest point without fear of its being broken.) They are now in general use with Artists and Professors of eminence, on whose recommendation they have been adopted by the Schools of Art, Colleges, and large Drawing Academies.

		Each
<b>HHHH.</b>	Extremely hard (for Engineering or Drawing on Wood)	
<b>HHH.</b>	Very hard (for Architectural Drawing)	
<b>HH.</b>	Hard (for fine Outline Drawing)	
<b>H.</b>	Moderately hard (for light sketching)	2d.
<b>FF.</b>	Very firm (for light shading)	
<b>F.</b>	Firm (for fine Drawing)	
<b>HB.</b>	Hard and Black (for free sketching)	
<b>B.</b>	Black (for ordinary shading)	
<b>BB.</b>	Soft Black (for deep shading)	
<b>EHB.</b>	Extra Hard and Black (for very bold sketching)	
<b>BBB.</b>	Very Black (for extra deep shading)	4d.
<b>BBBB.</b>	Extra Soft and Black (for full, rich, deep shading)	6d.
<b>6 B.</b>	Ditto with very broad Lead	9d.

ACCOUNT BOOK, REPORTER'S, COMPASS,  
POCKET BOOK, PROGRAMME, COLOURED,  
AND CHALK PENCILS.

## J. D. HARDING'S DRAWING PENCILS.

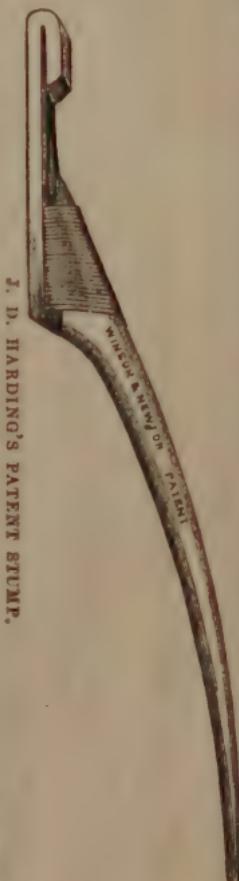
Hard, Medium, Soft, Extra Soft . . . . .	each	s. 0	d. 6
Case of 6 complete . . . . .	"	s. 8	d. 0

J. D. HARDING'S  
PATENT LEAD TABLETS  
AND  
PATENT STUMPS.

WINSOR &amp; NEWTON, SOLE MANUFACTURERS.

By means of these TABLETS, the dry, ineffective drawing ordinarily produced, is exchanged for something more akin to painting in Black Lead, and effects can with them be obtained, which are not within the compass of the Lead Pencil.

HOLDER WITH LEAD TABLET.



## PRICES.

	Each.	s. .	d. .
One, two, and three star, and extra hard . . . . .	0	6	
Tablets . . . . .	0	9	
Extra soft ditto . . . . .	1	6	
Holders (with propellers) . . . . .	0	8	
Stumps (two sizes, as described above) . . . . .	2	6	
Box with file and pad complete . . . . .			

COMPLETE WORKING SET, comprising two each one, two, and three star Tablets; three holders with propellers; two stumps; box with file and pad; and japanned box for containing the foregoing. Price 12s.

## CRAYONS, &amp;c.

**Best Hard Pastel Crayons**—Boxes containing 12, 1s. ; 18, 1s. 6d. ; 24, 2s. ; 30, 2s. 6d. ; 36, 3s. ; 48, 4s.

**Soft French Crayons**—Boxes containing 26, 3s. 6d. ; 42, 5s. ; 56, 7s. 6d. ; 62, 10s. 6d.

**Conté Crayons**,—Square, per dozen, 6d. ; Round, per dozen, 1s. ; Round Glazed, per dozen, 1s. 6d. ; in Polished Cedar, per dozen, 2s.

CHARCOAL, ITALIAN CHALK, WHITE CHALK, RED CHALK,  
LITHOGRAPHIC CHALK, STUMPING CHALK.

## LEATHERWORK, &amp;c.

**Round Leather Pencil Cases**, Small, 9d. ; Middle, 1s. ; Large, 1s. 6d.

**Flat ditto, Lettered**, Small, 2s. ; Middle, 2s. 6d. ; Large, 3s.

**Folding Morocco Pouch Cases**, Small, 4s. ; Large, 5s.

**Ditto, with Colour Box Pocket**, Small, 7s. ; Large, 9s.

**Best Leather Stumps**, from 2d. to 9d. each.

**Best White Paper ditto**, 3d. each.

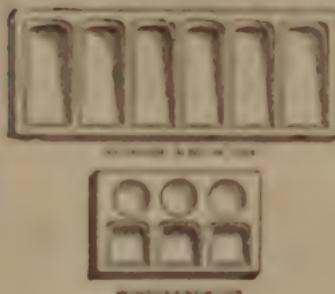
## Sketching Bags.

*(Of light weight, but strongly made; and complete with straps and spring swivel fasteners.)*

Designed to contain a Box of Moist Water Colours, Water Bottle, Block, Sketch Book, Brushes and small Sundries.

					£	s.	d.
8vo. Imperial size, of waterproof russet brown or "Mail Bag," canvas	•	•	•	•	1	1	0
4to. Imperial ditto ditto ditto	•	•	•	•	1	11	6
8vo. Imperial size, of enamelled black leather	•	•	•	•	1	11	6
4to. Imperial ditto ditto	•	•	•	•	2	2	0

## CHINAWARE.



WINSOR &amp; NEWTON

		£	£		£	£
6 inch Oval or Oblong				3 Division Slant		
Palettes.	each	0	9	4 ditto		0
7 ditto	ditto	0	11	5 ditto		1
8 ditto	ditto	1	0	6 ditto		1
9 ditto	ditto	1	3	8 ditto		1
10 ditto	ditto	1	6	12 ditto		2
6 inch Square plain				Centre Slant		0
flat Tiles	each	0	9	Box or 3 Slant Well		9
8 ditto	ditto	1	0	Slabs	each	0
10 ditto	ditto	1	6	5 Slant Well Slabs	each	6
3 Square divided flat				No. 1 Ink and Colour		
Tiles	each	0	6	Slabs	each	4
6 ditto	ditto	1	0	No. 4 ditto ditto	each	0
9 ditto	ditto	1	6	No. 11 ditto ditto	each	6
12 ditto	ditto	2	0	No. 11½ ditto ditto	each	9
No. 1 Nests of Cabinet				Round Slant and Basin		
Saucers	per set	1	3	(for Architects' Offices, &c.)	each	6
No. 2 ditto	"	1	6			
No. 3 ditto	"	2	0			
No. 1 ditto (in morocco case).	"	3	0			
No. 2 ditto ditto	"	4	0			
No. 3 ditto ditto	"	5	0			
3½ inches by 2½ Tiles (Bartholomew's)	"	0	6	1 inch Round Tinting		
2½ inch Saucers (Woolwich)	"	0	1½	Saucers	each	1
				1½ ditto ditto	"	0
				2 ditto ditto	"	1
				2½ ditto ditto	"	1½
				3 ditto ditto	"	2
				4 ditto ditto	"	2

## WINSOR &amp; NEWTON'S WATER BOTTLES AND CUPS.



No. 1. 2s. 6d.  
Small Oval  
Water Bottle  
and Caps.



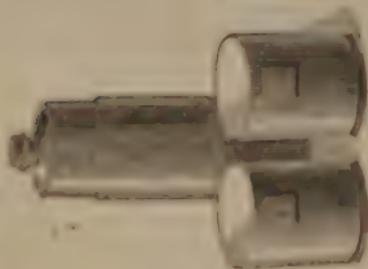
No. 2. 7s. 6d.  
Sketcher's  
Water Bottle and  
Brush Case complete.

No. 7. 4s. 6d. 7s. 6d.  
Flat Oval Water Bottle  
and Caps.



No. 3. 7s. 6d.  
Small Oval  
Water Bottle  
and Caps.

No. 4. 4s. 6d.  
Middle Oval  
Water  
Bottle  
and Caps.



No. 6. 6s.  
Large Oval  
Water Bottle  
and Caps.



BEST LONDON MADE  
MATHEMATICAL INSTRUMENTS.



WINSOR &amp; NEWTON

FOUR GUINEA BOX.

BOXES FITTED COMPLETE; AT FOLLOWING PRICES, VIZ.:—

HALF-GUINEA—ONE GUINEA—ONE GUINEA AND A-HALF—  
TWO GUINEAS—TWO GUINEAS AND A-HALF—THREE GUINEAS—  
THREE GUINEAS AND A-HALF—FOUR GUINEAS—FIVE GUINEAS.

SEPARATE INSTRUMENTS.

		Each.
		s. d.
Drawing Pens—	Ordinary (No. 1)	2 6
"	Ivory handle, Lift up nib (No. 2)	4 6
"	Electrum, Ivory Handle, Lift up nib (No. 3)	5 6
Dividers —	Brass, Steel Joint (No. 4)	2 6
"	Brass, Sector Joint (No. 5)	4 6
"	Electrum, ditto (No. 6)	6 6
"	Brass, Hair Points (No. 7)	7 6
"	Electrum ditto (No. 8)	10 6
Compasses—	Brass, Steel Joint; Half set (No. 9)	5 6
"	Ditto slip shanks; ditto (No. 10)	7 6
"	Electrum, Sector Joint, with bar; Half set, in Case (No. 11)	31 6
Universal Compasses,	Brass, in case (No. 12)	7 6
Napier Compasses,	Electrum, " (No. 13)	18 0
Ditto, Complete set	ditto " (No. 14)	31 6
Pillar Compasses,	ditto " (No. 15)	31 6
Ditto with bars	ditto " (No. 16)	42 0
Proportional Compasses,	ditto " (No. 17)	42 0
Tubular Compasses, with needles, Electrum, in case (No. 18)		63 0
Bows—	Brass, Pen or Pencil (No. 19)	3 6
"	Ditto, ditto round points (No. 20)	4 6
"	Electrum, ditto ditto (No. 21)	5 6
"	Ditto ditto double jointed, needle points, in case (No. 22)	31 6
"	Spring, Set of three, in case (No. 23)	21 0
"	Ditto, ditto to hold needles (No. 24)	31 6

---

## METALLIC SUNDRIES.

**Fine Gold Shells**, each, 4*d.*, 6*d.*, 9*d.*, and 1*s.*

„ **Saucers**, „ 9*d.*, 2*s.*, and 4*s.*

„ **Cakes**, „ 5*s.* 6*d.*

**Aluminium Shells**, „ 3*d.*; **Saucers**, 1*s.*; **Cakes**, 1*s.*

**Silver** „ 3*d.*; „ 1*s.*; „ 1*s.*

**Fine Gold Ink**, per Bottle, 1*s.* 6*d.*

**Gold Paint**, Small Bottles, 1*s.* 6*d.*; Large ditto, 4*s.*

**Bronze, Gold Paper, Gold Leaf.**

**Portcrayons**—Brass, 4*d.* and 6*d.*; Albata, 9*d.* each.

**Drawing Pins**, 6*d.*, 1*s.*, 1*s.* 6*d.*, 2*s.*, and 2*s.* 6*d.* per dozen.

---

## VARIOUS SUNDRIES.

**Burnishers**, Small size, 1*s.* 6*d.*; Large, 2*s.* 6*d.*

**Ivory Palette Knives**, each, 9*d.*, 1*s.* 6*d.*, 2*s.*, and 2*s.* 6*d.*

**Ivory Tracers**, Small, 9*d.*; Large, 1*s.* 6*d.*

**Ivory Brush Rests**, 6*d.*, 1*s.*, and 2*s.*

**Prepared Ivories**, from 8*d.* to 12*s.*

**Water Glasses**—Ordinary, 9*d.*; Large "Artist's," 1*s.* 6*d.*

**Best Bottle and Patent Rubber**, from 3*d.* to 6*d.* per piece.

**Ink and Pencil Eraser**, 6*d.*; Indian Rubber Pencils, 4*d.*

**Sponge**—Ordinary, from 3*d.* to 6*d.*; Fine Cup, from 2*s.* to 3*s.* 6*d.*

**Indian Glue**—in Sticks, 2*d.*; Liquid Glue, 3*d.*, 6*d.*, and 1*s.*

**Pens**—Crow Quill, 1*s.* per bundle; Steel Lithographic, 2*s.* per card

**Emery Paper**, 2*d.* per sheet; Glass Paper, 1*d.* per sheet.

**Pencil Sticks**, 3*d.* and 6*d.* per dozen.

---

**N.B.**—The following will be found in the after portion of the Catalogue, viz., Drawing Boards (Page 94), Easels (Page 89), Sketching Stools and Seats (Page 91), Sketching Tent (Page 92), Sketching Umbrella (Page 92), Squares, Curves and Rules (Page 95), Erasers and Knives (Page 84).

---

## PUBLICATIONS.

---

WINSOR & NEWTON'S  
ONE SHILLING  
HANDBOOKS ON THE FINE ARTS.  
WITH ILLUSTRATIONS, &c.

---

For List see outside Wrapper page.

---

WINSOR & NEWTON'S  
2s. 6d. BOUND  
HANDBOOKS ON THE FINE ARTS.  
WITH ILLUSTRATIONS, &c.

---

**Sketching from Nature.**—Comprising the Art of Sketching from Nature, and Hints for Sketching in Water Colours from Nature.

**Landscape Painting in Water Colours.**—Comprising the Art of Landscape Painting in Water Colours, and a System of Water Colour Painting.

**Marine Painting.**—Comprising the Art of Marine Painting in Water Colours, and the Art of Marine Painting in Oil Colours.

**Portrait Painting.**—Comprising the Art of Portrait Painting in Water Colours, and the Art of Portrait Painting in Oil Colours.

**Figure Drawing.**—Comprising the Art of Figure Drawing, and an Artistic Treatise on the Human Figure.

**Transparency Painting.**—Comprising Transparency Painting on Linen, and the Art of Transparent Painting on Glass.

**Artistic Anatomy of Animals.**—Comprising the Artistic Anatomy of Cattle and Sheep, and the Artistic Anatomy of the Horse.

**Illumination.**—Comprising Manual of Illumination and Companion.

**Perspective.**—Comprising the Elements of Perspective, and Drawing Models and their Uses.

---

## J. D. Harding's Works.

EDITED BY W. WALKER.

## Lessons on Art.—Imperial 8vo.

3.75*ds*

Bound in Cloth, or Six Parts complete . . . . .	15	0
Each Part separately . . . . .	2	6

## Lessons on Trees.—Imperial 4to.

Bound in Cloth, or Six Parts complete . . . . .	15	0
Each Part separately . . . . .	2	6

## Elementary Art.—Imperial 4to.

Bound in Cloth . . . . .	25	0
--------------------------	----	---

## Early Drawing Book.—Imperial 8vo.

Bound in Cloth . . . . .	10	6
Six Parts complete . . . . .	9	0
Each Part . . . . .	1	6

## Pencil Sketches by J. D. Harding.

Nine Autotype fac-similes mounted and in Imperial Portfolio complete . . . . .	50	0
--	----	---

## Lessons on Animals and Figures.

As applied to Landscapes. By W. Walker. Imperial 8vo.		
Bound in Cloth . . . . .	7	6

## Field's Chromatography. Demy 8vo.

A Treatise on Colours. T. Salter's Edition.		
Bound in Cloth . . . . .	21	0

## Mural or Monumental Decoration. By W. Cave Thomas.

Demy 8vo. Bound in Cloth . . . . .	16	0
------------------------------------	----	---

## Barnard's Trees. Imperial Folio, 22 by 15.

The Work, 30 Plates and letterpress complete . . . . .	42	0
Half Bound, handsomely, in one Vol. . . . .	52	6
Separate Parts of 10 Plates and letterpress . . . . .	14	0

## The Art of Figure Drawing. By T. H. Maguire.

Impl. 4to. Bound in Cloth, with 30 full plate illustrations	42	0
---	----	---

## TURNER'S 'LIBER STUDIORUM.'

- I.—Mountain and Marine Subjects.
- II.—Architectural and Historical Subjects.
- III.—Pastoral and Elegant Pastoral Subjects.

Being the Complete Series of Autotype Prints of these well-known Studies, seventy-one in number, reproduced from an early Subscriber's Copy of the Work in the best condition. The Plates are printed in Sepia, as nearly as possible the colour of the original, and are guaranteed to be ABSOLUTELY PERMANENT. For the convenience of Purchasers the Series has been divided into Three Volumes, in the way in which the Artist himself classified them. They thus furnish excellent manuals for all Students of Art.

Handsomely bound in Cloth in Three Volumes, 4to. Imperial size.

		£	s.	d.
Single Volumes . . . . .	each	2	2	0
The Work complete in Three Volumes . . . . .		5	5	0

## CLAUDE'S 'LIBER VERITATIS.'

A Selection of Seventy-two Autotype Prints of the choicer Examples of this valuable Work. Forming a Companion Series to Turner's 'Liber Studiorum.' Reproduced in Autotype from the Etchings by RICHARD EARLDM. For the convenience of Purchasers, the Series has been divided into three volumes containing:

- I.—Marine Subjects.
- II.—Landscapes.
- III.—Pastoral Subjects.

Handsomely bound in Cloth in Three Volumes, 4to. Imperial size.

		£	s.	d.
Single Volumes . . . . .	each	2	2	0
The Work complete in three Volumes . . . . .		5	5	0

## SIR JOSHUA REYNOLDS.

A Selection from the Works of Sir Joshua Reynolds, from Prints (by the most eminent Contemporary Engravers) in the British Museum. Mounted on Half Imperial tinted boards. This Section is invaluable to all who study Portraiture, and contains one hundred and fifty Autotype Prints in three volumes complete,

	£	s	d
Each Volume (Half Imperial size) . . . . .	6	6	0
3 Volumes complete . . . . .	15	15	0

## AN ARCHITECT'S NOTE-BOOK

18

### SPAIN.

*Principally Illustrating the Domestic Architecture of that Country.*

BY M. DIGBY WYATT, M.A., F.S.A., &c., &c.

A Series of one hundred admirable Sketches, which that accomplished Architect, Sir Digby Wyatt, made in Spain, in 1870, from subjects as novel in character as they are important for the History of Architecture in that country. Each Sketch is accompanied by Critical Notes, by which, Sir Digby explains the salient points of interest which he observed in the subjects selected for illustration.

Post Due, with 100 Autotype Reproductions of the	£	s	d
Author's Sketches . . . . .	2	12	6

## BRUSH-NOTES IN HOLLAND.

BY ROBERT TAYLOR PRITCHETT, F.S.A.

A Series of Ninety Sketches, One Volume, half imperial, handsomely bound, with Explanatory Text.

These Sketches are admirable examples of facile execution, and are most faithfully rendered in Autotype.

The Volume complete . . . . .	£	s	d
	5	5	0

## STUDIES

FROM

## THE GREAT MASTERS.

A very carefully selected Series of Autotype Prints, reproduced in fac-simile from Drawings in Chalks, Pencil, &c., by the Great Masters.

In Parts (4to. Impl.) each containing Six Studies, per Part 5s. 0d  
The Work, bound complete (containing 48 plates) £1 5s.

---

**Parts 1, 2, 3. STUDIES OF HANDS.**

After Drawings by Andrea del Sarto, Bouchardon, Caracci, Coypel, Domenichino, Albert Dürer, Greuze, Holbein, Lesueur, Lebrun, Michael Angelo, Raffaelle, Rigaud, Rubens, Vandyck.

**Part 4. STUDIES OF FEET.**

After Drawings by Andrea del Sarto, Coypel, Lebrun, Mieris, Michael Angelo, Raffaelle.

**Part 5. STUDIES OF CHILDREN AND YOUTHS.**

After Drawings by Boucher, Carlo Dolci, Correggio, Dürer, Fra Bartolomeo, Raffaelle.

**Part 6. STUDIES OF HEADS AND CHILDREN.**

After Drawings by Andrea del Sarto, Bouchardon, Coypel, Zucchero.

**Part 7. STUDIES OF INFANTS AND YOUTHS.**

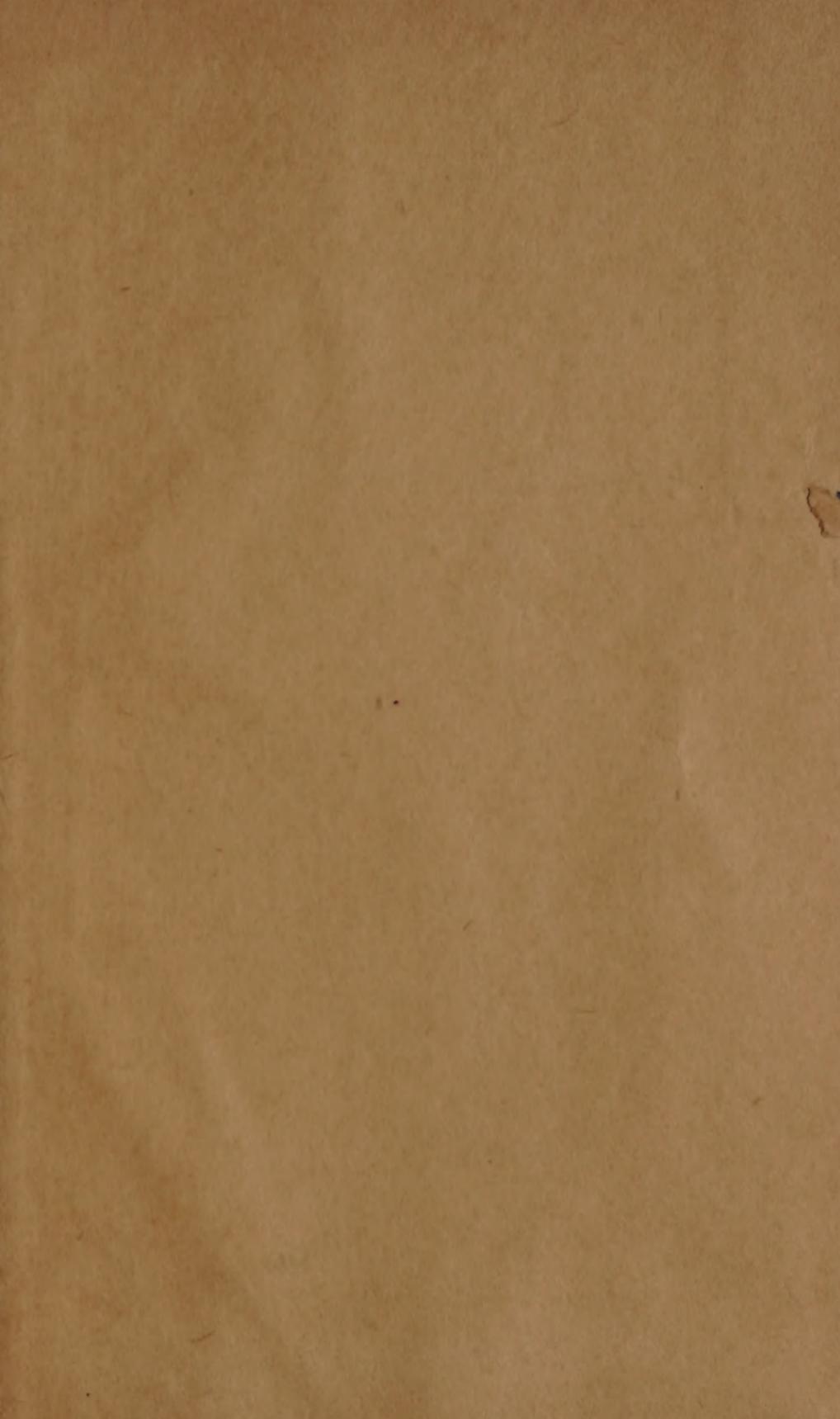
After Drawings by Boulogne, Carlo Dolci, Lebrun, Raffaelle.

**Part 8. STUDIES OF HEADS, CHILDREN, YOUTHS.**

After Drawings by Boucher, Bouchardon, Correggio, Caracci, Lebrun, Rubens.

---

*m**2*



**Boston Public Library  
Central Library, Copley Square**

**Division of  
Reference and Research Services**

**The Date Due Card in the pocket indicates the date on or before which this book should be returned to the Library.**

**Please do not remove cards from this pocket.**

MAY 3 1929

